



BUSINESS TECHNOLOGY LEADERSHIP

INDIAN OUTSOURCING

Why their infrastructure troubles will become your problem

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ITIL: THE NEW MODEL

Now it's all about alignment

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green IS BETTER

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**SPECIAL
REPORT**

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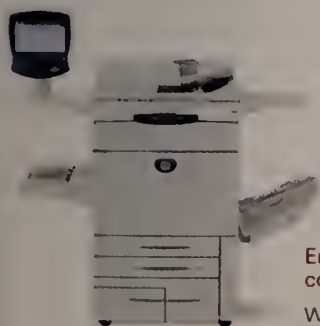
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[KM]

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"Having spent huge sums of money on computing power to help them streamline processes and create repositories of data, many organizations want to believe they can apply IT as a simple shortcut to knowledge management." —Charles Lanigan, on knowledge sharing in the workplace
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CIO EXECUTIVE VIEWPOINT

The New Promise of Next-Generation Storage Technology

Enterprise Performance, Functionality & Reliability at the Lowest Total Cost of Ownership

Paul Speciale

Vice President, Marketing & Product Management, agámi Systems

Paul Speciale has focused the majority of his career on data management and storage solutions with Object Design, IBM Global Services and Oracle. Now, at agámi Systems, Speciale drives the product direction and go-to-market strategy for the agámi Information Server, the first enterprise-class NAS with live file system replication, 4-6 times higher performance, 5 times better space density, and delivers 50 percent lower power and cooling demands.

Network attached storage (NAS) just isn't what it used to be, says Paul Speciale, vice president of marketing and product management for agámi. Today, new storage technology promises greater processing power at much lower costs. Read on to find out what else Speciale has to say about storage.

How does next-generation technology address storage challenges?

Today, a corporation's data is commonly at hundreds of terabytes and growing astronomically. Next-generation storage systems address this trend with new levels in scalability, performance and simplicity of management. This growth clearly magnifies the power, cooling and housing requirements of IT equipment, so storage systems now leverage the latest in processor technology, more efficient disk drives and denser packaging to handle such environmental challenges. Finally, business continuity implies a need for maintaining two or more local and remote copies of data to ensure availability. Next-generation systems enable administrators to easily manage these additional copies, and replication guarantees that remote data is correct, consistent and usable.

"Next-generation storage systems cut TCO in half, if not more."

How do storage systems ensure high data availability and reliability? What's at stake?

What's at stake is the viability of the business, which makes availability and reliability absolutely crucial. Availability is essentially solved through total redundancy, for which we can now deploy systems with no shared components and no single point of failure. Of course, reliability starts with

a very efficient design and high component lifetime. For example, storage systems now use drives rated well over a million hours in meantime between failures. And component monitoring lets administrators know when environmental and physical conditions require attention. Today's storage systems are as reliable as prior generation proprietary systems, but by riding the cost curves of commodity components, they're much more affordable.

What can CIOs expect today in terms of network performance?

We've broken the one-gigabyte-per-second throughput barrier for a single NAS module, so this provides the processing power required to deal with these huge data capacities. Combining this performance with the lower price points that our customers enjoy today results in a very compelling price/performance equation.

What can CIOs expect in terms of NAS innovation?

We're very focused on unifying NAS and IP/SAN solutions for a single system to serve both file-based applications and databases, thereby delivering all the management advantages of a single framework. We're also working on incredible advances in replication technology. This includes the ability to cascade replications, which is a very efficient way to enhance content distribution and data protection. Finally, we're looking toward intelligent, policy-based migration of files between different storage tiers. This means storage systems can transparently move files between high-performance, de-duplicated, compressed and dormant storage based on use frequency.

How can next-generation technology impact TCO?

Next-generation storage systems cut TCO in half, if not more. High-end storage costs



\$15,000 to \$25,000 per terabyte or more, but now high-performance storage is available for well below \$5,000 per terabyte. Today, we're managing storage through browser-based interfaces, and we've removed lower-level detail through provisioning. That means a single administrator can manage hundreds of terabytes of data. Improved environmental efficiencies can yield a 50 percent reduction in power and cooling demands. And CIOs can expect five times better storage capacity to save on rack and floor space.

Can CIOs realistically expect to achieve a better total cost of ownership?

Absolutely. Corporations with hundreds of terabytes of data are already using our solution and reaping major savings every month. These customers are certainly validating the TCO advantage through repeat business.

For More Information: Check out this white paper, "agámi Systems: Economical, High Performance NAS", at www.cio.com/whitepapers/agami

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FROM THE EDITOR

Going Green

After decades of talk and no action, a change is coming



In late February I participated in a conference at the United Nations on "Enhancing Women's Global Leadership Through IT." (CXO Media, *CIO*'s publisher, was a conference sponsor.) I met scores of smart people from all over, all committed to improving the lot of women in and through IT. The conference was moving. It also struck me as rather sad.

Speaker after speaker noted that women are leaving IT, that women are underrepresented in IT leadership, that girls are not entering the sciences. Then

they proposed strategies to turn things around.

What made me sad was that in September 2000, *CIO* ran a story, "Why Women Hate IT" (www.cio.com/inprint), that pretty much identified the same problems and proposed many of the same solutions. And almost seven years after that story ran, nothing much has changed.

Meaningful shifts in the way large groups of people think and behave are rare. In my life, I've seen two: the absolute intolerance for driving drunk (which was a subject for comedy when I was a teenager, 40 years ago) and the banning of smoking from public places with the attendant stigmatization of the habit.

These two changes in the way we live happened because the media, the government and grassroots action combined to inundate the public with negative messages about smoking and drunk driving. It was an irresistible conflation of powerful forces that continues today. And that's the kind of energy that needs to be leveraged for millions of people to change the way they think and act, individually and collectively.

That same gathering of forces now seems to be occurring in the environmental arena. *An Inconvenient Truth*, Al Gore's movie on global warming, wins an Oscar last month and President Bush admits that yes, maybe climate change is a legitimate concern. Governments around the world are passing new regulations against polluters and energy hogs. "Green" has become a selling point for products, and business is learning that sustainable energy practices are not just ethical, they're profitable.

This month's special report, "Green Is Better," both describes this mind shift and is a part of it. Take our quiz, "How Green Are You?" on Page 56 or online at www.cio.com/inprint, to see whether you're part of the solution or part of the problem.

As for women in IT...it seems to me that that tipping point has not yet arrived.

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FROM THE PUBLISHER

IT Means Business

Perhaps it's time to find a new name that better reflects the IT executive's duties



I recently attended IDC's 42nd annual Directions conference in San Jose, Calif., an event where the world leader in information technology market research (and a *CIO* sister company) showcases its predictions for the coming years.

One of the more interesting sessions I attended was titled "CXO Priorities."

A major finding of the research was that the nomenclature for "IT" and "CIO" is morphing into something very different. And although I am pub-

lisher of an IT magazine called *CIO*, I have to agree.

According to the report, all IT initiatives should (and will) become business initiatives, and the role of the CIO is evolving quickly into a business executive role—which is something we've always talked a lot about in the pages of *CIO* and on *CIO.com*. But now we've reached the point where all the talk will become reality.

To reflect that reality, perhaps we should ditch the name IT exec in favor of IB (information business) exec, or possibly BT (business technology) exec.

And what does *business* encompass right now? The IDC study identifies eight primary drivers and issues.

For technology executives to become business executives, they need to have a firm handle on *resources* (both fiscal and human); they must understand *compliance*; the ability to *assess risk* is next, followed by being skilled at *cost control*. One's ability to improve *time to market* is just ahead of understanding the ramifications of *globalization* and understanding *customer expectations*. Comprehending the *competitive nature* of the business (including industry consolidation) concludes the list.

How skilled are you in those eight business areas? Do they excite your passion? If they do, you have a bright future in this business no matter what your title. If they don't, it's time for you to move on.

Gary J. Beach

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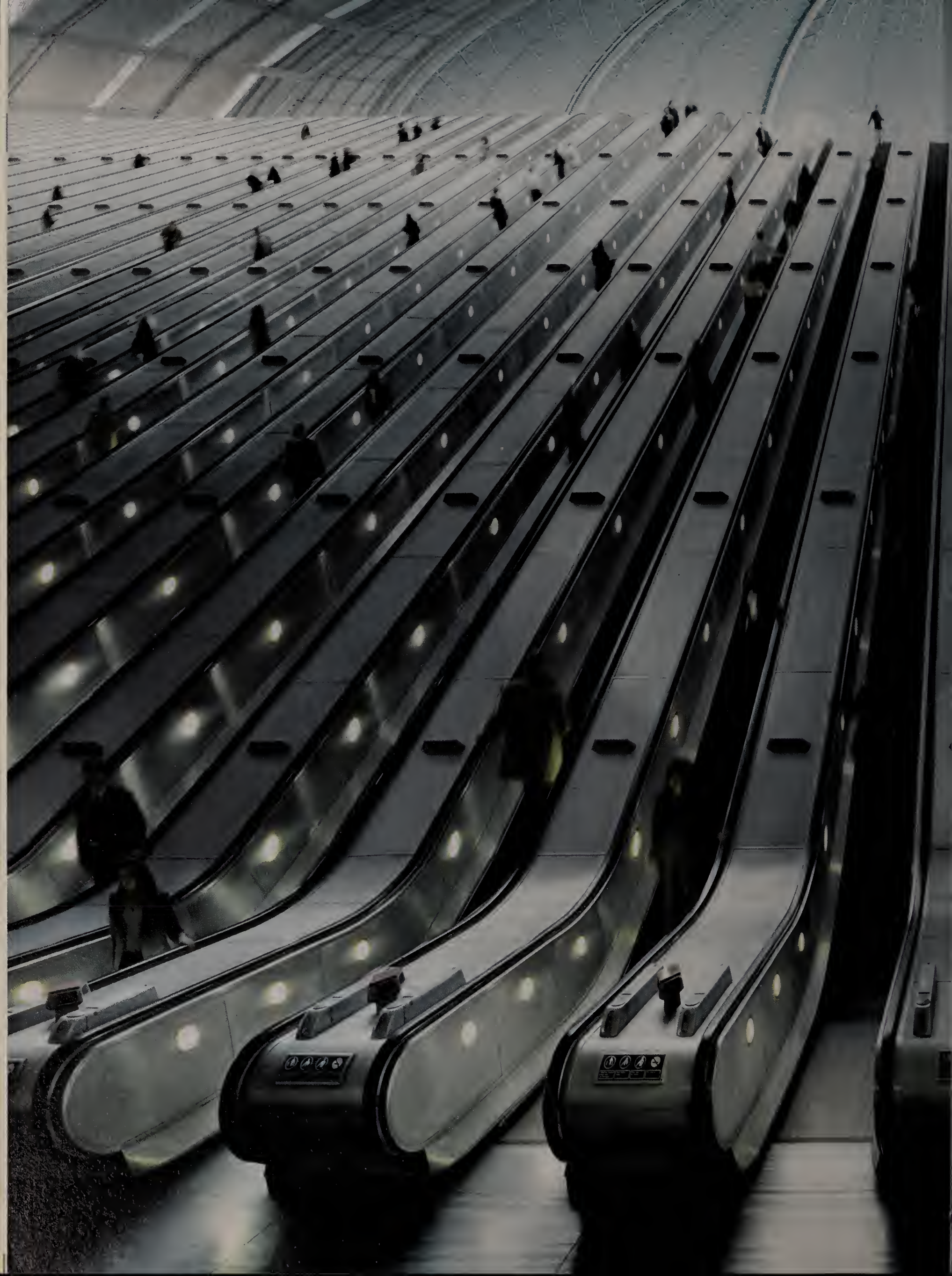
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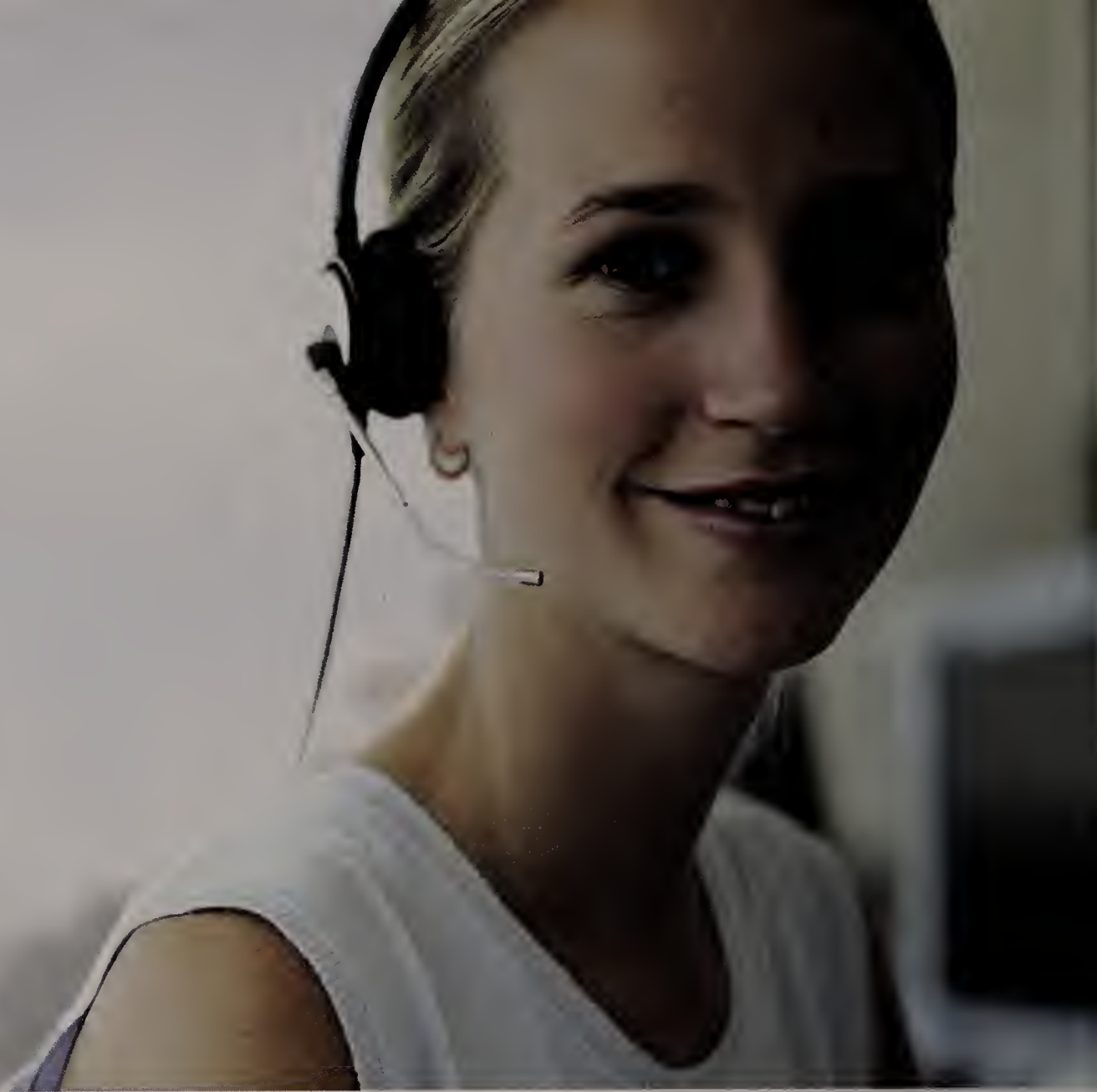
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NEW * HOT * UNEXPECTED

Wikinomics 101

INNOVATION The best ideas for your business might come from someone who doesn't work for you. That's the contention made by consultant Don Tapscott in his newest book, *Wikinomics: How Mass Collaboration Changes Everything*. Tapscott, along with coauthor Anthony D. Williams (London School of Economics), believes that companies will have to use the Net to seek external talent to innovatively solve challenges. Tapscott stopped by *CIO*'s office to discuss his theory and its implications. (See www.cio.com/inprint for the full interview.)

CIO: What do you mean by wikinomics as a business theory? And what would be a good example of wikinomics at work?

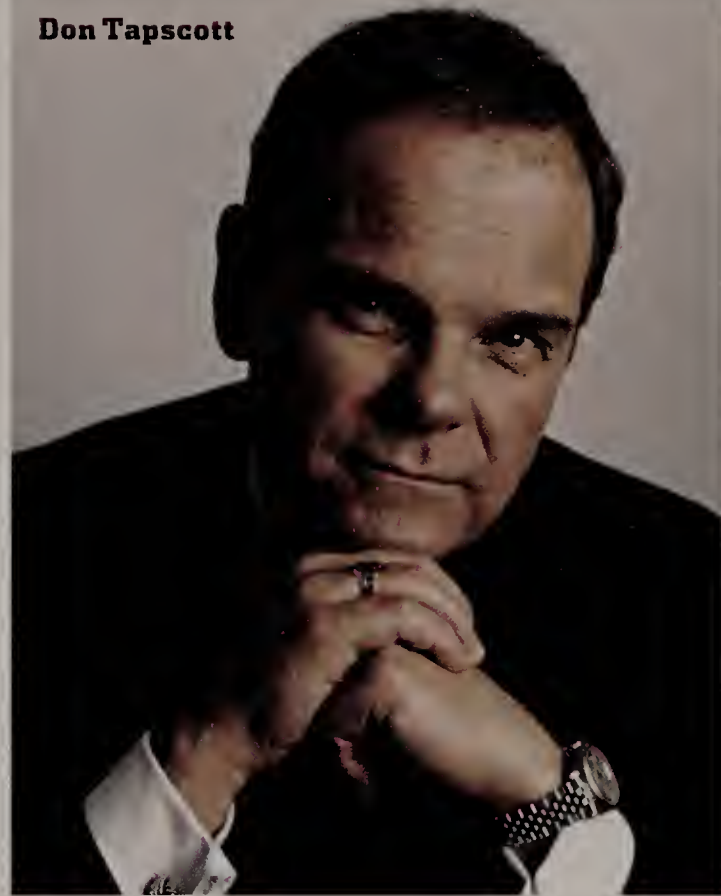
Don Tapscott: Wikinomics is the theory and practice of harnessing mass collaboration for growth and for innovation. I know this guy named Rob McEwen. He's my neighbor. He

ran a gold mine for several years and was ready to shut the whole company down because his geologists could not tell him if there was gold on the company's property. He wonders, If my guys don't know where the gold is, maybe somebody else does.

Rob does a radical thing. He publishes his geologi-

Continued on Page 16

Don Tapscott



Early Google Apps Adopters Like the Price

ON-DEMAND SUITES Google has pushed further into Microsoft's turf with a major upgrade of its Google Apps hosted suite. Like the free Standard and Education Edition versions, the new Premier offering has Gmail Web mail (with BlackBerry support), Calendar shared scheduling, IM and integrated Docs & Spreadsheets apps. But for \$50 per user per year, Premier customers will get 10GB of e-mail storage per user, instead of 2GB. A Premier subscription also buys a 99.9 percent uptime guarantee, IT management tools and phone support, and tools for integration with other business data.

What's winning over the first Google converts? Money. Consider realty company Prudential Preferred Properties in Chicago, which is feeling a sting of between \$350 and \$400 per Microsoft Office license. "We have instances in which the Office license was more expensive than the PC it's on," says Camden Daily, Prudential's director of IT.

While 450-employee Prudential still uses Office, it doesn't want to use MS Exchange any longer. Google Apps has found its way in as the salvation for an outsourced e-mail service that constantly malfunctioned. Prudential has been using the free Standard version—but Daily says that the Gmail service alone is worth the price of the Premier edition, which he will adopt. "Everything on top of that is just a bonus," he says. He'll evaluate Docs & Spreadsheets.

What's missing? Google Apps needs a presentation application like PowerPoint, and better support for offline work beyond its ability to import and export files from Docs & Spreadsheets, analysts say.

Dave Girouard, vice president and general manager of Google's enterprise unit, says Premier can be a good complement to Office, and Google sees a big opportunity in organizations that haven't been able to justify the cost of offering e-mail to some employees. —Juan Carlos Pérez

Why Small Loans Need Big IT

MICRO CREDIT Fly off the handle when you lose reception on a mobile device? Get angry when your e-mail server hums a little too slowly? Well, try laying out an IT infrastructure when your primary clients live in some of the world's most remote villages.

Jiten Patel, CIO of nonprofit Finca (Foundation for International Community Assistance), faces just this challenge. Finca gives small loans—usually \$80 to \$200—to the “poorest of the poor” to start micro businesses. The businesses usually center around village marketplaces and sell baked goods, fresh produce or crafts. With 500,000 members, Finca operates in 21 countries spanning Latin America, Africa and Eurasia. Women make up between 85 percent and 90 percent of its loan recipients.

When Patel joined Finca about a year ago, a local administrator was individually managing IT within each member country. A 15-year-old legacy system was failing to reliably handle the weekly transactions. “It was strug-

gling with the kind of volume we’ve been receiving,” Patel says. Also, when a local server crashed, it was difficult to get an IT repair person onsite.

After traveling extensively, looking for ways to streamline, Patel decided to base IT operations in three central locations. Working with a soon-to-be-announced vendor, Finca will set up a system in which customers will upload data from village branches to the three hubs. Patel’s first inclination was to set up a Web-based solution for uploads. With a lack of telecom and computers in those remote areas, however, he is now thinking smart cards might be better. “Given the vagaries of the environment, we need to have an offline mode,” Patel says.

He is also considering using an ASP to further streamline operations. “When you operate in a nonprofit environment, you have to be extra mindful of every dollar spent. In our case, that dollar can be utilized in making a micro loan to a customer,” Patel says.

—C.G. Lynch

Wikinomics 101

Continued from Page 15

cal data on the Web, which is unheard of in any mineral mining-related industry. Rob holds a contest called The Goldcorp Challenge, with half a million dollars in prize money. He gets 77 submissions from around the world and he finds more than \$3 billion dollars’ worth of gold.

That’s a clear example of where opening up sensitive company information had demonstrable ROI. What about protecting intellectual property?

Increasingly, if you’re going to peer-produce things and mass collaborate, if you’re going to get more deeply involved in collaborating on precompetitive research, then you need a portfolio of IP—some that you own and some that you share.

How do companies decide when it’s appropriate to harness external talent? Smart companies will treat the world as their R&D department and use the Net to seek out ideas, innovations and uniquely qualified minds. If you look at the procedure followed by Procter & Gamble, that’s a good model. The first thing P&G does is they identify a need for something—say, a new molecule. Then they ask, Do we already have that within our boundaries? Next, they ask, Is this something that we have the capability to do very quickly ourselves? And if the answer to both of those questions is no, then they’ll say, Is this something that exists outside our boundaries? And then if the answer to that is yes, they’ll put out an RFP.

How does mass collaboration affect the CIO? Is this an opportunity or headache? The old IT department model was, We’re IT, we build infrastructures and applications and deliver them to users to meet their needs. And a new model might be, We harness the power of mass collaboration, within our enterprise and outside, to create platforms whereby both internal and external users can coinnovate capability and value.

—C.G. Lynch

Mobster Metrics

You gotta hand it to Tony Soprano: He needs almost no technology to keep money coming in by the Hefty bagful. With the highly anticipated final season of HBO’s *The Sopranos* scheduled to begin in early April, here’s a peek at where the wise guys stand, metrics-wise:

Peak viewership of an episode: **13.4 million** (season 4 premiere)

Emmys haul: **17 nominations** and **4 awards**

Most seen computer brand on the show: **Apple**

Amount of ziti that James Gandolfini earns per episode for final 8 shows: **\$1 million**

Amount of actual ziti eaten on camera: **Supercomputer’s still working on it**





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A Gift That Keeps On Giving to Your Career

VOLUNTEERISM

When you work with colleagues on a philanthropy project, it benefits your career. That's what Becky Blalock, senior vice president and CIO of Southern Co. in Atlanta, tells her staff. "The issues we are facing are universal," Blalock says. By talking with peers, she might come across the answer to a problem she's been trying to solve.

Blalock has been working with TechBridge, a

nonprofit that provides IT consulting to other nonprofits, for several years. Among many projects, she has worked alongside other major corporations in Atlanta to build Habitat for Humanity houses. "I like it because my security people are out there with security people from Georgia Power," she says.

Vendors can pitch in too. "We allow vendors to participate with us, which they like because they get some airtime with us," she says.

Blalock's charity and volunteer work is extensive. That's why Computers For Youth (CFY) gave her this year's CIO of the Year award, recognizing a CIO for community service.

Blalock's already thinking of ways to help CFY. "I'm hoping to build a partnership between TechBridge and CFY," she says. "A lot of kids don't have access to technology, and they're in a world where, to be successful, you have to have that."

—Margaret Locher

Lessons Learned

When you volunteer, you will hear other people's best practices. "It's not why I volunteer, but it's a great benefit," Blalock says.

Encourage your direct reports to find initiatives they are interested in serving.

Support groups that can, in turn, support many projects. "It's a way to leverage what you do," she says.

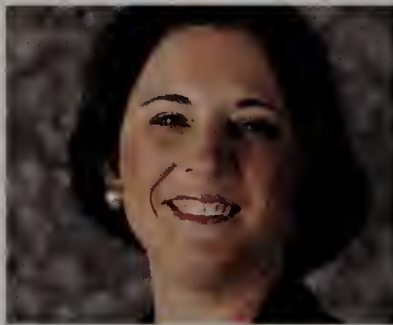
The CIO role today is not about technology, but leadership. "And there's no way to better grow than to give back to the community," Blalock says.

The Interim CIO Jinx

ON THE MOVE

In November, healthcare giant Kaiser Permanente appointed Bruce Turkstra as interim CIO while it searched for a new IT leader. Turkstra replaced Cliff Dodd, who resigned after a former Kaiser employee circulated an e-mail damning the company's IT efforts. Nearly four months later, Kaiser concluded its CIO search with the hire of Philip Fasano. In the press release announcing the news, chairman and CEO George Halvorson thanked Turkstra, who had joined Kaiser in 2002, for his "excellent leadership and expertise."

If Turkstra's leadership was so



Ann Speyer

excellent, why was he passed up for the CIO post?

"This was a matter of picking among a group of excellent candidates," Mike Lassiter, Kaiser Permanente's VP of media and external relations, told us via

e-mail. "The person selected brought an array of experiences, business acumen, strategic approach and deep technical skills that were judged to best serve the organization's technological agenda."

Sam Gordon, director of executive search firm Harvey Nash's CIO practice, says in cases like these, the firm may want to distance itself from the previous

IT management by selecting an outsider.

In general, the odds of being officially named CIO are not good for internal candidates turned interim CIOs, Gordon says. "In many cases, external candidates have an advantage because there's no formed ideas about them," he says.

A few acting-turned-official CIOs recently have beaten the odds:

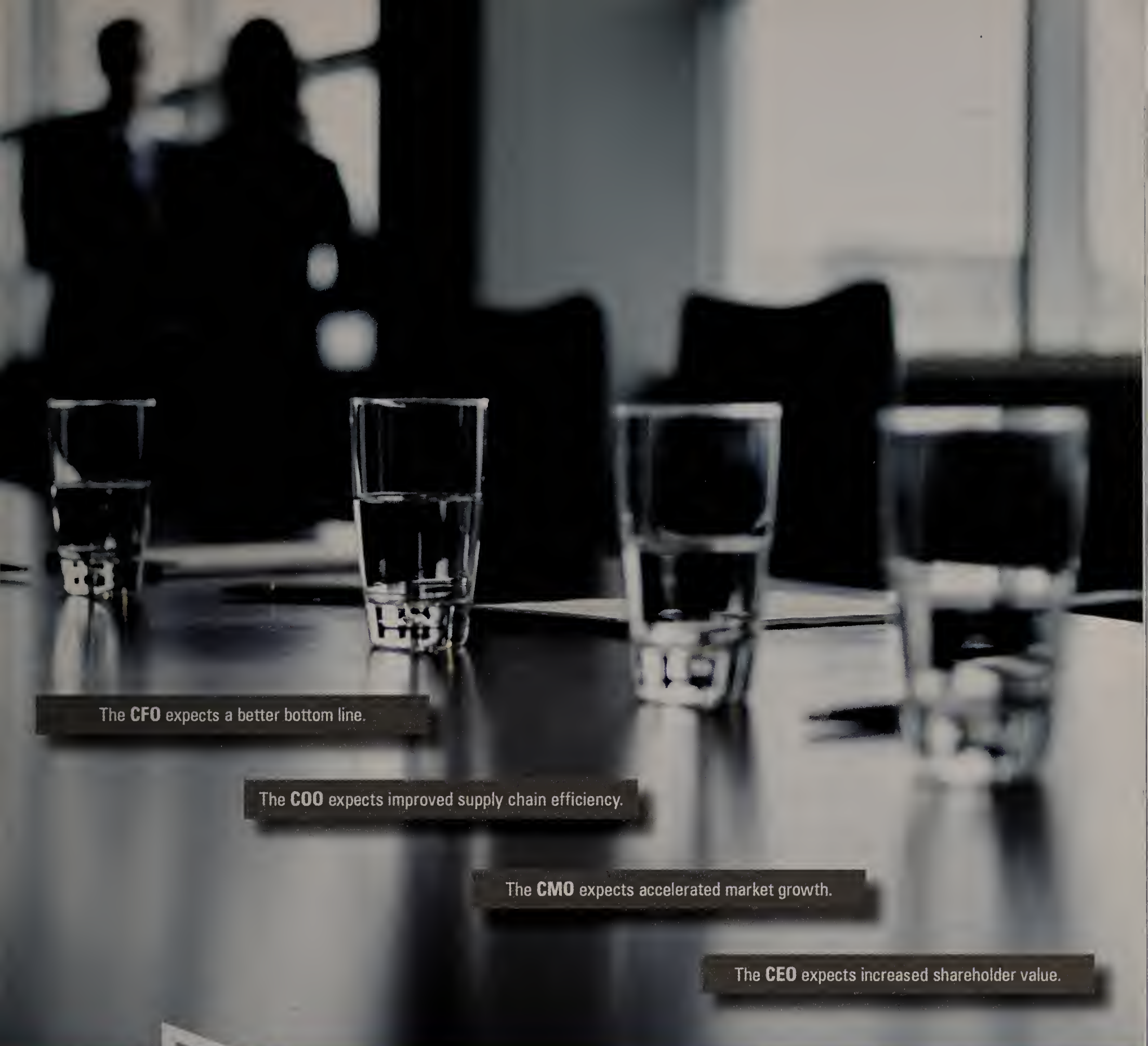
Ann Speyer officially assumed the role of CIO at Smithsonian after serving as its acting CIO since September 2006.

ICG Commerce named **Rick Bunker** its CIO in January. He had been serving as ICG's interim head of technology and information management since September 2006.

David Roseberry was named vice president and CIO of RTI International in November 2006 after serving in an interim position since June 2006.

—Meridith Levinson

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CEOs Rate IT: STEADY But UNCREATIVE

MANAGEMENT REPORT If your CEO is happy with your work, then you should be happy too, right?

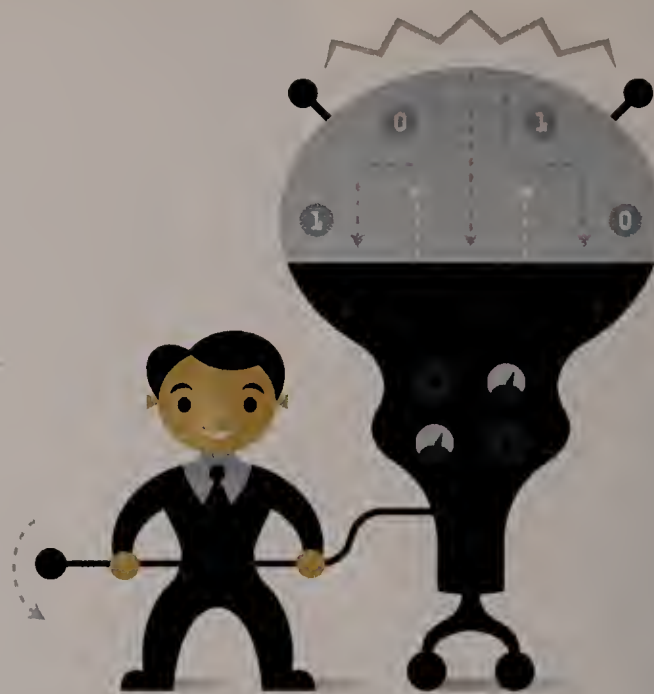
Maybe not. Forrester Research recently asked CEOs what they thought of their IT organization, and their answers, per the report "Closing the CEO-CIO Gap," were surprising. The good news: 59 percent of the 71 respondents (who represented companies with more than \$100 million in revenue) were either satisfied or very satisfied with IT's performance. But at the same time, just 28 percent of the CEOs reported IT was proactive regarding business innovation, and just 30 percent called IT proactive on process improvement. That's bad news.

The CIO must take an active part in moving the company forward, the report states, or the IT department—and the CIO's career—will stagnate. "If you maintain the status quo and change nothing, that ultimately results in decline," says Laurie Orlov, Forrester VP and principal analyst and the report's primary author.

Orlov advises CEOs to educate themselves about IT's potential, but points out that CIOs bear half the responsibility for fixing the situation. What's Forrester's advice for CIOs, beyond the usual directives to get IT people out in the business trenches, and make sure IT is connected to the business strategy? First, if you're doing more than the CEO realizes, market your achievements. And if the CEO and other execs don't understand what you're doing, educate them.

Don't alienate other execs with techspeak: When the CEO felt the CIO was a good or excellent communicator, the CEO was more likely to view him as a proactive leader on process improvement (41 percent, versus 30 percent overall). Go to the online version of this story for a link to the full report, at www.cio.com/inprint.

—Sara Shay



Content Management Not Just for Giants

MID-MARKET Enterprise content management (ECM) software vendors, most recently IBM, are vying to increase their appeal to midsize businesses. While many large enterprises already have solutions provided by EMC, IBM or FileNet (acquired by IBM last year), some midsize companies have steered away from ECM software as being too expensive and complicated to use. However, as the amount of content users of all sizes have to deal with continues to grow dramatically, midsize customers have an increasing need to manage it.

Increasingly, pure-play ECM companies like Interwoven, Open Text and Vignette are aligning themselves with infrastructure software vendors, notably Microsoft, to integrate their capabilities into desktop applications. At the same time, Microsoft and Oracle are providing more lower-level content management functionality themselves, as a way to drive sales of their databases and middleware.

IBM is considering how best to serve the content needs of midsize companies, says Steve Mills, senior vice president of the vendor's software group. "We're already reaching into the middle and have some skinnyed-down products," he says. IBM shipped its first major release of its acquired FileNet technology, FileNet P8 4.0, in February. The software helps users capture, manage, access and bring together content from across operations, automating records management and aiding compliance efforts. A new J2EE-based content engine and content federation services for third-party repositories help with search, classification, storage and updating of content held in data stores from a variety of software vendors.

Utility company Consolidated Edison Company of New York has been an IBM customer for more than 35 years and a FileNet user for more than 15. It began deploying FileNet's P8 in late 2004 to automate the transfer of data between the company and outside agencies such as the Department of Transportation, says Franklin Alvarez, manager of computer applications, construction services.

Alvarez's unit does the excavation for laying new electricity cables or gas pipelines and related repairs in New York City, tasks that require continual liaison with multiple agencies to obtain permits. The utility is keen to put more content, such as layouts of systems and compliance specs, into its workers' hands at excavation sites.

—China Martens

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BY JUAN CARLOS PÉREZ

Program Manager

job description: A program manager oversees a set of interdependent IT projects that need to be synchronized and completed successfully to achieve a broader goal. "The program manager is responsible for pulling those teams together and tying those projects into a single view," says Sam Lawler, practice director of project management and strategy at GlassHouse Technologies. Program managers understand a program's technology requirements and the business goals. They can talk about applications to a developer or give the CIO a high-level picture of the program's progress. Program management is the way most IT work will be carried out in the future, so this is definitely a hot job, says David Van De Voort, principal human capital consultant at Mercer Human Resource Consulting. "Program managers manage the processes by which technology gets done. These are more business roles than tech jobs. It's a key boundary spanner."

what to look for:

Program managers must be skilled communicators, goal oriented, highly organized, excellent planners and good negotiators. Other desirable qualities: positive, optimistic, fair and likable. "Anytime you manage a large team, people have to want to work for you in order to do a good job," Lawler says. Candidates should have experience managing programs in sectors similar to your company and with comparable budgets, team size and duration.

elimination

round: Ask candidates about the most complex program they have ever coordinated. Their answer will tell you whether they are qualified for the job.

growing your

own: Take a person with a strong technical background and expose to the business side. Knowledge of operations and product/service development process is key. Lawler emphasizes the ability to "programmatize," which he defines as the art of taking a general business goal and breaking it into actions that can be measured and achieved.

why you need

one: A decade ago, most IT initiatives could be undertaken as single projects. Not anymore. The reason: the complexity of IT resources and assets and their impact on a company's business operations. "For

CIOs trying to implement change, change inevitably comes in the form of complex projects, which are really programs," Lawler says. IT initiatives today often require a programmatic approach to ensure proper execution and coordination. Program managers are experts in structured frameworks for provision of IT services and in methods for managing processes. Using a disciplined approach, they define needs, establish budgets and manage progress.

desired skills:

Knowledge of developing and future technology and

business trends. Project and program management coursework and certifications. A bachelor's or master's in computer science, as well as an MBA.

how to find them:

"Find someone from the inside. They understand your technology and your business as well as your culture," says Jim Lanza-lotto, vice president at Yoh. Look for midlevel managers who have expertise in application development, operations and services, as well as 10 years of IT experience, five of those years doing project or program management.

**salary
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ESSENTIAL technology

FROM INCEPTION TO IMPLEMENTATION—I.T. THAT MATTERS

Edited by **Laurianne McLaughlin**
lmclaughlin@cio.com



The new update to the IT Infrastructure Library could help you improve IT-business alignment and change your focus from fire fighting to service delivery

ITIL Goes Strategic

BY GALEN GRUMAN

I.T. MANAGEMENT | ITIL is an acronym that some CIOs don't understand well. If they're aware of the IT Infrastructure Library, it's in the context of two of the library's books that provide guidance on improving help desk services (such as handling support requests) and on improving IT operations (such as managing software changes within the data center). In other words, ITIL is something that the operations staff uses. But the IT Infrastructure Library—the set of practices and service approaches outlined in a series of guides and supported by a host of toolkits, certifications, consultancies and user groups—can do more than serve as a best-practices framework for solving specific operational needs.

A growing number of CIOs are using ITIL to achieve better business alignment. For them, ITIL helps create operational consistency across multiple departments and locations, as well as with contractors and suppliers. It helps IT focus on delivering service to business units and customers, not just delivering technology.

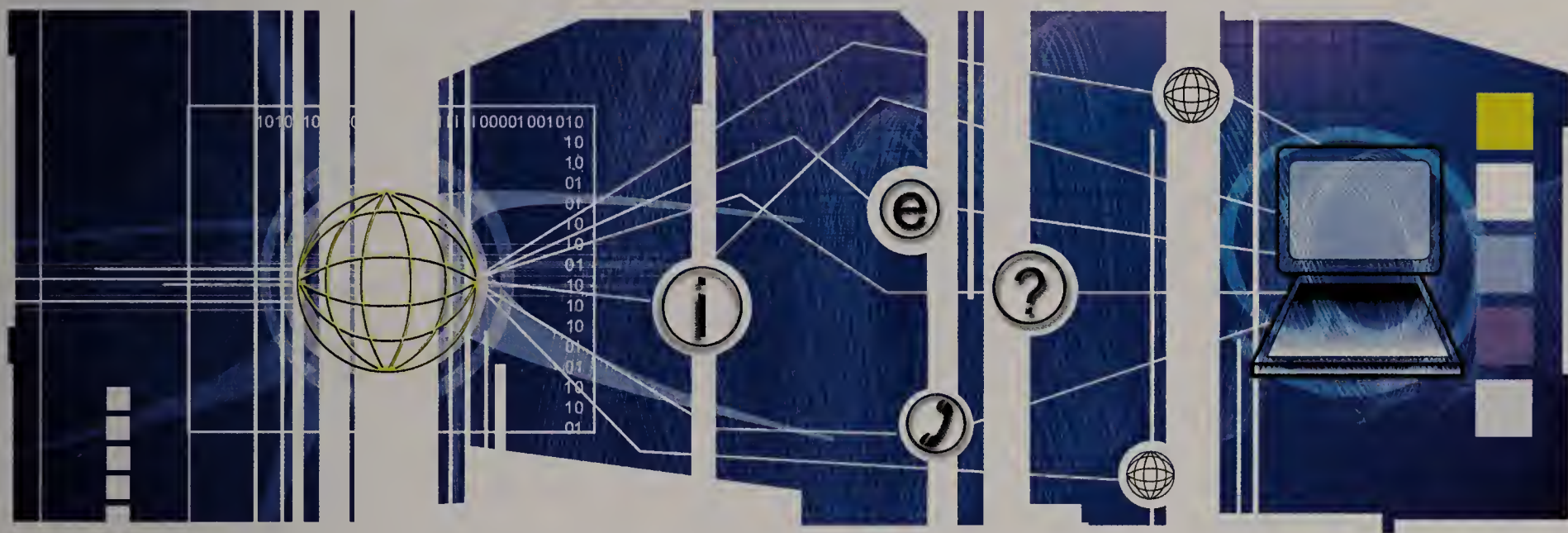
"The old model is that success is fulfilling a requirement or delivering on schedule. ITIL says success is based on whether the business value is where it needs to be," says Jo Lee Hayes, vice president of enterprise technologies at SLM, the mortgage lender known as Sallie Mae.

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At last, Desktop management becomes *truly manageable*



In the past, managing PC environments has been a challenge not only for end users, but also for IT staffs dealing with desktop issues such as integrating multiple applications and troubleshooting machines as well as the networking issues that arise in today's complex enterprises.

Microsoft has listened to its customers, assimilated their feedback and assembled a package of products that goes a long way toward completing the seamless, end-to-end computing experience that customers have long requested.

By rolling out its Microsoft Desktop Optimization Pack for Software Assurance, Microsoft is providing a multifunction

package exclusively for Software Assurance users that not only addresses several key desktop management pain points, but also emphasizes Microsoft's appreciation of this influential customer market segment.

The company has unveiled this combination of technologies on Jan. 1, 2007 so it can rapidly get the functionality in the hands of Software Assurance users, many of whom made long-term investments in Microsoft through the Enterprise Agreement volume licensing program.

The four components in this package—which will cost approximately \$7-\$10 per machine for Software Assurance customers, depending on their volume purchase level—reduce application deployment costs, enable the delivery of applications as services and allow for better management and control of

Microsoft®



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enterprise desktop environments. They further enable organizations to manage their software assets, predict and accelerate software deployment and management, and enhance IT responsiveness and end-user uptime. The result for end users is a reduced total cost of ownership relating to the operating system and the entire application management lifecycle.

In addition to their exclusive access to the Microsoft Desktop Optimization Pack for Software Assurance, Software Assurance users also have access to Windows Vista™ Enterprise, which includes additional desktop management resources such as data protection, application compatibility and multi-language support.

According to Laura DiDio, a research fellow at Yankee Group, these capabilities are sorely needed by IT organizations. "Lost productivity and increased management costs associated with today's large and complex corporate IT systems take a massive toll on enterprises and IT resources," DiDio notes. "More than ever, these companies need the ability to instantly access and control all of the applications on employee desktops, mobile PCs and other machines. And for companies to get their money's worth from their IT investment, employees need unhampered and virtually uninterrupted use of these programs."

"The Microsoft Desktop Optimization Pack directly addresses these issues, and will enable businesses to significantly reduce the time and number of administrators needed to successfully resolve help desk problems."

As noted by Microsoft, "It's about making sure our Windows offering—especially with a new release on the horizon—continues to be a very valuable experience for our customers in terms of both usage and management."

Alamance Regional Medical Center (ARMC) should have counted its blessings. Instead of managing the hundreds of software applications needed to run many national and international companies, it only had to maintain a comparatively modest 75. But until recently, it would have been hard to convince the healthcare firm that its glass was half full, not half empty.

The problem was, those 75 applications felt like a thousand to the center's IT team, which was struggling to update and manage

Alamance Regional Medical Center case study



the diverse, and often incompatible, medical records, research and other software on its 1,500 PCs and thin clients at its facilities in

Alamance County, N.C.

"It was a nightmare," says Andy Gerring, ARMC's senior network administrator. Deploying new applications took more than 5,000 hours per year, an average of 96 hours a week. Doctors, nurses and other employees lost nearly as much time when the IT system was down, and logged a total of more than 2,000 calls to the IT help desk annually.

ARMC's deployment and management challenges were due in part to the compatibility problems created when applications require different versions of Web programming languages or management programs, but the operating system can only run one.

The firm has taken back control of its applications with the virtualization technology in Microsoft SoftGrid, which Microsoft acquired with the purchase of

Microsoft® SoftGrid®

Based on application virtualization technology, Microsoft SoftGrid enables dynamic delivery of virtualized applications. Critical applications are served when needed—easily and quickly, without conflicts, and with a reduced footprint for the operating system. This strategy greatly decreases a longstanding pain point. For example, Microsoft is nearing the introduction of the Microsoft® Office 2007 system, but when it is ready to ship, many LAN-based applications built on Microsoft Office 2003 and, in some cases, Microsoft Office XP will still be in use, which means that many users will likely end up running multiple versions of Microsoft Office. Currently, managing these multiple versions must be handled locally. This creates complex desktop management scenarios, including potential conflicts in user experience and overall support.

SoftGrid mitigates this issue by virtualizing the application, allowing normally conflicting applications to

run simultaneously. In this example, the previous version of Microsoft Office 2003 can be delivered as a virtualized application while Microsoft Office 2007 is loaded on the main operating system. This allows the administrators to standardize on Microsoft Office 2007 without forcing users off Microsoft Office 2003.

With SoftGrid, operating system migration and patching are also simplified, because the application layer can be separated from the OS image management and the applications can be patched at the server and streamed with the next session without interrupting the users. Virtual applications can also be streamed to the virtual OS session, which enables users to continue running in their existing operating system environments, which remain easily—and virtually—accessible. Laptop security, which is a nettlesome problem for many IT organizations, is also enhanced, because if a laptop is stolen, the thief who takes it does not have access to

Softtricity in July, 2006. When an employee uses a virtualized program, dynamic streaming technology quickly sends just the portions of the program's code needed to get up and running from a central server to a desktop. When the session terminates, the code, settings, and profiles are saved on the central server.

Virtualization has also eliminated most of the deployment and management challenges ARMC experienced, including the hundreds of hours that IT staff spent testing application compatibility. It now takes the firm less than eight hours to deploy a new application—roughly a tenth of the time required previously. In addition, annual upgrades are now done on a central server and delivered automatically to employee PCs, allowing ARMC to more frequently add upgrades and hot fixes.

the software that's on it because it's virtualized. When it comes to operating system migration, SoftGrid takes the pressure off users, because they don't have to port all their applications over right away. They can continue running them in the existing operating system environment on remote servers and simply stream them to their desktops.

With SoftGrid, any child process spawned from a virtualized parent process will operate inside the virtual environment of the parent process. This means that a local application like Internet Explorer, which cannot be streamed directly, can have a completely different set of security permissions, toolbars, home page, security template, and so on delivered in a virtual environment, and have the local iexplore.exe pulled into that environment. As a result, that instance of Internet Explorer will operate in a completely different environment, despite being a locally installed application.

Microsoft® Asset Inventory Service

All the acquisitions, downsizing, upsizing and reorganizations taking place in the corporate world are creating highly complex licensing environments for IT shops, which have to scrutinize their networks to determine what types of software they have deployed, where it is deployed, how it is being used, and who is using it.

In addition, they have to ensure that they are licensed appropriately for the software packages they are using. For example, it is not unlikely that an IT organization with 5,000 seats may have an Enterprise Agreement for only 4,000. This could be the result of the company purchasing a significant amount of new hardware, leading to it being licensed on some desktops through its OEM, and on others through different types of licensing contracts.

Asset Inventory Service helps bring order to this chaos by enabling organizations to categorize and inventory those software licenses. It offers added value because it is not limited to Microsoft software licenses, but includes a multivendor collection of over 400,000 software titles as part of its inventory database. And customers who have their own applications can add them or others to the list, which is constantly updated.

Terry Baker is director of IT Procurement for Expedia, the Bellevue, WA-based online travel company. He says Expedia relies on Microsoft Asset Inventory Service to reduce its IT management and support problems, as well as to gain insight into the software running on the company's 5,700 desktops and other PCs. According to him, Expedia's first inventory recouped the cost of the service—which it licensed separately prior to its inclusion in the Desktop Optimization Pack—eight times over. As it turned out, the company had thought it was running many more versions of a vendor's software than it actually was.

"For the first time, we had solid proof," Baker declares. "Before, we just had to guess. If you don't perform accurate inventories, you are either spending money on software you aren't using or don't possess, or you are increasing your unfunded liabilities."

Microsoft® Diagnostics and Recovery Tool Set

A fundamental responsibility of enterprise IT departments is protecting corporate and employee data. Although many of these groups take a proactive approach to backing up network data, they tend to be reactive in planning for desktop system failures. Unfortunately, the cost of not having an effective diagnostics and recovery plan in place can be devastating. Think of what it costs each time employees can't work because their desktops are down, or because an IT staff member is pulled from other important tasks in order to restore an end user's machine.

Microsoft Diagnostics and Recovery Tool Set can save significant time and reduce the headaches associated with troubleshooting and repairing system failures. It offers system administrators the possibility of quickly restoring failed systems with minimal manual effort.

It also provides many options for recovery, rather than simply forcing IT to "reinstall Windows." Even when safe mode or normal boot will not function, the toolset provides an offline environment in which IT staff can attempt several types of recovery not otherwise available. It is easy to use, because the offline boot environment allows rapid recovery for problem computers, including the recovery of deleted files, and the manipulation of services, devices, and local passwords.

With the Diagnostics and Recovery Tool Set, both IT staff and end users realize faster, more accurate resolutions and greater productivity.

Microsoft® Advanced Group Policy Management

The Microsoft Advanced Group Policy Management capability provides more granular administrative control of group policy objects—the component rules within Windows' administrative management system—and enables IT administrators to delegate or assign administrative control of specific tasks based on employees' titles or roles.

Currently, the group management console maintains a very binary delegation authority, which translates into someone having either full authority to change group policy objects, or no authority at all. Microsoft Advanced Group Policy Management breaks that down so appropriate IT personnel can assign one individual to, for example, edit group policy objects, while another employee is authorized to create or delete them. The product also automates the workflow associated with that delegation authority, so it is only necessary to indicate the various levels of approval and who has them, and the workflow auto-generates e-mails when it is time for someone to approve a change.

The current group policy management environment requires that changes to group policy objects be made in either a live environment or a lab. With Advanced Group Policy Management, it is possible to edit changes and do testing offline and then bring the revised objects back into live operation.

The product also features a full versioning record and complete history of all changes—including who made them and when they were made. Administrators have access to audit logs and difference reporting that describe how changes impact performance. If a change has an undesired effect, the system can be instructed to delete it and roll back to a previous state.

Additional Desktop Management Resources from Windows Vista Enterprise

The customer who purchased Software Assurance on the Windows Desktop also gains additional desktop management resources by using Windows Vista Enterprise.

Data protection: Windows Vista Enterprise includes Windows BitLocker™ Drive Encryption, a new technology that helps prevent sensitive data and intellectual property from falling into the wrong hands if a computer is lost or stolen. Windows BitLocker uses hardware-based data encryption technology that gives you greater peace of mind knowing that your corporate intellectual property is safer and will remain your strategic asset. Also, since the entire hard drive

“Our goal is to put companies back in control of their IT systems”



is encrypted, Windows BitLocker reduces the cost associated with decommissioning old PCs.

Application compatibility: Windows Vista Enterprise includes built-in tools to improve application compatibility with previous versions of Microsoft operating systems, as well as with UNIX operating systems. Included in Windows Vista Enterprise is the license to run four virtual OS sessions, which enables you to run a legacy application on a legacy Windows operating system in a virtual environment on top of Windows Vista Enterprise. This feature saves you time and money if you are unable to easily migrate a legacy application directly to Windows Vista.

Multi-language support: An interface language controls which language a user sees in the Windows

Start menu, in the help system, in built-in management tools, and in Windows dialog boxes. Windows Vista Enterprise includes all available interface languages in one offering. Access to all worldwide interface languages enables organizations to build a single deployment image that can be used worldwide, and to deploy individual PCs that simultaneously offer different interface languages for different users.

Conclusion

By offering the Microsoft Desktop Optimization Pack exclusively to its Software Assurance customers, Microsoft is returning the loyalty these large customers have shown through their long-term commitments to the company's key technologies.

Microsoft is also addressing key management pain points shared by these organizations, making it easier for both IT staffs and end users to maximize their productivity.

“Our goal with the Microsoft Desktop Optimization Pack is to put companies back in control of their IT systems,” says Gavriella Schuster, senior director of the Windows Client Product marketing group at Microsoft. “This pack creates truly dynamic desktops, with applications that can be managed and maintained with much less effort than today, regardless of where employees access them, be it on desktop PCs in the home office or on a company laptop in a distant airport.”



For more information, go to
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As Rudy Wedenjoa, director of enterprise operations management at General Motors, puts it, "ITIL cares about how to organize the chaos of operations." GM saw the use of ITIL as critical to ensure both operational consistency and a focus on service delivery when the company sought to move from a single IT contractor model (involving its former EDS subsidiary) to a global, multiple-supplier outsourcing model to handle its IT needs. GM realized that the various suppliers, as well as GM's own IT staff, would need a common language and viewpoint to deliver consistently, Wedenjoa says.

To date, however, ITIL has come under some fire for telling IT departments what to change but not how. And its independent volumes have caused many organizations to apply ITIL only to a few operational areas, missing the larger benefits possible. An updated version, due by June, promises more real-world examples, best-practice models and metrics—and emphasizes the entire IT lifecycle and ROI issues, as opposed to narrow operational issues. CIOs say the change is welcome.

Get Out of Reactive Mode

The current version of ITIL, version 2, consists of eight books, each offering a framework for a specific IT operational process. Most organizations use just two—the Service Support and Service Delivery books—in a tactical way, to improve their help desk operations through better incident and problem management.

Some organizations also use the books to improve their change-management efforts, notes Ed Holub, a Gartner research director.

Although these are natural areas for IT to try to fix, especially organizations mired in constant fire fighting, something more substantial has to happen before IT can become a business enabler rather than a back-office support organization, says John Sansbury, head of practice for service management at the Compass consultancy.

IT organizations should prevent the

problems from occurring in the first place, Sansbury says: "About 70 percent of incidents [problem reports] are caused by poorly controlled change. ITIL helps create the control." Independent ITIL consultant Malcolm Fry agrees: "Looking for root causes is now important—you just can't keep fixing things."

That's why Rich Taliani, vice president of IT at Guardian Life Insurance, has promoted the use of ITIL. "We're trying to get out of the reactive mode." He notes that ITIL helps create a consistent level of process across the organization by creating a

cability more obvious.

But organizations already have to view technology from a lifecycle perspective to make the connection, notes SLM's Hayes. "If you don't have horizontal thinking, you will have a very difficult time adopting ITIL," she says.

The new library will also have more real-world examples and best-practice models, as well as metrics. These changes should help overcome previous ITIL books' general guidance, which many companies found difficult to translate to their specific needs, says Compass's Sansbury.

"The current ITIL tells you what but not how, which is pretty important." The new version has more examples, best-practice models and metrics. —Fred Broussard, research manager, IDC

standard methodology to apply within IT (including language).

However, many organizations have missed or ignored ITIL's other aspects, such as financial management (such as determining the cost of implementing a change), capacity management, software asset management, lifecycle configuration management and license change management, says Fred Broussard, a research manager at IDC, a sister company to CIO's publisher. One reason: The current ITIL presentation, says Fry, is "more focused on projects than on the lifecycle."

Recognizing that many organizations view ITIL tactically, in a limited fashion and often at a lower organizational level than the CIO office, the U.K. Office of Government Commerce (ITIL's creator) has revamped ITIL. The updated version, composed of five core books, integrates more material and presents a more IT lifecycle-oriented framework that further emphasizes ROI and other business values. It should make ITIL's broad appli-

"The current ITIL tells you what but not how, which is pretty important," notes IDC's Broussard. "It lacks a lot of detail; it's very descriptive but not prescriptive," says Hayes.

And the new version will cover how to apply ITIL principles in outsourced operations, something the current version gives scant attention to, Sansbury adds. That's critical for companies like GM that outsource much of their IT operations, and for companies that rely on vendors to develop key processes in their applications rather than do this work in-house.

Make IT Service-Minded

One hope for the new version is that it will speak more to the CIO and other senior IT executives so that they see ITIL's utility and begin promoting its approaches and even demanding them across their organizations, says consultant Fry. "The CIO can pick up a book to better understand the operations specifically for, say, change management, an area that he may have no

experience with," he says.

"You can't take for granted that if the IT managers are taking care of the operations you don't have to worry about it as CIO," says David Wheeldon, director of service management at Hewlett-Packard Education EMEA, UK, and coauthor of the new ITIL book on Service Operations.

But that doesn't mean the CIO should become the hands-on manager for that issue. "I'll read the new ITIL, but I won't figure out how to modify my systems for it," notes Hayes. "But I will aggressively ask how my vendors are going to modify their systems for it," she adds. Similarly, a CIO should push IT operations managers on how they're using it.

Overall, a CIO should use the new ITIL books to set the goals for being a service-oriented organization, develop the metrics to assess whether the operational goals are being met and help develop or buy the processes that help the IT organization make the shift, Fry recommends.

"ITIL drives the strategic direction that IT is about services," says George Spalding, a vice president at the consultancy Pink Elephant and coauthor of the new ITIL book on Continual Service Improvement. "And it provides a definition of success," he adds.

This shift to service orientation is particularly critical for companies constantly fighting technology fires, which causes executive management to question the CIO's abilities and prevents a view of IT as a business enabler from taking root.

"No one cares about the CIO's strategic vision," if the help desk stinks, Spalding says.

And as more and more customer-facing processes become automated, tolerance for poor service plummets. "CIOs don't have room for error any more," Fry says. Using ITIL, a CIO can "ask a pile of

questions for real change," he notes. For example, you might ask whether an IT effort changes capacity requirements, has a recovery strategy built into it and has realistic service-level agreements—all lifecycle issues often neglected if you're focused on delivering technology.

Improve the Big Picture

A CIO also can integrate ITIL approaches as part of a cohesive services effort, Fry notes. For example, the Control Objectives for Information and related Technology (Cobit) standard provides a complementary framework for developing policies around service requirements and controls, Six Sigma focuses on repeatable processes, and Capability Maturity Model Integration (CMMI) focuses on improving technical and managerial maturity. Using all of these could help the IT organization succeed as a business enabler across the board. Using ITIL in a vacuum, IT might improve operations but let poor controls continue and miss chances to generate new business, consultants say.

Conversely, says Fry, an organization pursuing these other approaches but not ITIL risks having an operational foundation that can't support the maturity achieved elsewhere. You don't have to use all these methodologies to succeed, but an organization tackling improvement holistically should do better than one that treats these as one-off efforts, he says.

An understanding of ITIL will also help a CIO deal with a request from IT operations managers for a configuration management database (CMDB), meant to track both the components and the relationships among them for the software, hardware and other aspects of IT systems. The goal of a CMDB: help IT identify up front the implications of proposed changes—from new hardware to a software patch—on the entire system, then resolve the issues before implementing the changes.

The CMDB concept is coming into vogue both because vendors are offering CMDB tools and because it's a natural next step in the ITIL process after an organization

Where your peers stand:

3% of organizations have completed ITIL efforts

49% are in progress

32% plan to start within the next 18 months

16% have no plans

SOURCE: Gartner

has resolved incident and support management problems.

However, a CMDB is a big investment that involves significant process change, technically and politically.

Understanding how a CMDB fits into the operational improvement that ITIL promotes will let the CIO assess whether the organization is actually ready to implement a CMDB, or whether work is needed to provide the right process and cultural foundations.

That's a calculation that Guardian's Taliani is now making. Guardian split its ITIL efforts into two phases, the second of which will require a CMDB—but before committing, Taliani wants to ensure it will be used effectively. So he'll make sure ITIL adoption is deep before deciding. (With shallow adoption, IT people could revert to old practices as demands increase, he points out.) If the ITIL adoption takes root at Guardian, he expects to commit to at least a basic CMDB effort. **CIO**

Galen Gruman is a frequent contributor to *CIO*. To comment on this article, go to the online version at www.cio.com/inprint.

All About ITIL

Need to get up to speed? Find our guide, **ABCs OF ITIL**, at www.cio.com/inprint.

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Put People Before Processes

To reap the benefits of globalization, companies must adapt their business processes—and systems—to the needs of local employees and customers



Globalization beckons with the promise of leveraging the world's workforce while capturing global markets. Yet realizing the value of global product development, manufacturing, sales and service is fraught with challenges that few companies have mastered.

Nevertheless, the rewards are potentially huge if processes and technology can be transformed to exploit global capabilities. Matching capabilities with the highest-value location provides productivity rewards, while reaching global customers offers new fuel for growth. However, broken processes torture many global initiatives, creating complexity and requiring expensive human coordination.

Consultants and vendors argue that standardizing business processes to eliminate that human glue is the solution. But it's difficult to transform processes without destroying the advantages that global partnerships provide. Many companies acquire local partners to expedite entry into an emerging market only to find that assimilating them into the home office's sales process strips the local partner of its cultural advantage. Process transformation often results in rigid systems that leave both team members and customers feeling numb rather than empowered. Finding the balance between process standardization and people empowerment is the trick.

While process transformation has been simmering in many companies for a decade, globalization has foiled best practices that work within the United States. Bringing East and West Coast design centers into a common development process is one thing. Adding Shanghai is another. Companies must adapt their processes quickly or be trampled by competitors who are more savvy globally.

Why Global Collaboration Fails

The human element kills many transformation efforts. Transformation projects that attempt to roll up the work of global teams into standard processes may miss the unique requirements of different regions and ignore the trust people require to collaborate effectively. While the rise of outsourcing has led some to argue that any work can be anonymously interchanged, human beings drive global teams to solve problems and find success where others fail.

For example, at Align Technology, which provides plastic aligners used to straighten teeth, the human element became critical to process transformation when existing practices could not accommodate the company's growth.

Align had a distributed manufacturing process involving dental technicians and orthodontists in Costa Rica—who developed treatment plans for the patients of doctors in the United States—along with manufacturing facilities in Mexico. The ability to ship images of a patient's mouth between locations allowed Align to mass-customize treatments using highly skilled yet lower-cost labor.

Align knew that a tool for sharing patient information and a simple customer-facing process would be a prerequisite to nurturing collaboration with doctors. So the company developed software that allowed doctors to visualize treatment plans and share them with patients while collaborating with design technicians and manufacturers.

But as Align grew, this process strained the company's ability to provide consistent treatment plans and reliable product delivery. The Costa Rican technicians cherry-picked the easier jobs, causing delays for more difficult treatment designs. In addition, without one-to-one matching between doctors and technicians, the doctors did not build a rapport with a single design collaborator. As the number of cases submitted increased, each doctor spent more time with a new technician communicating his or her design preferences.

As an interim remedy, Align assigned process monitors and expeditors to keep patient data moving and improve service. But this was a costly fix, and it ultimately failed because the increasing workload outstripped the expeditors' ability to prevent process failures. The resulting frictions undermined the doctors' trust in the process, turning them to Align's competitors and causing Align's growth to slow down.

Think Globally, Work Locally

Learn about **HOW TWO I.T. LEADERS ORGANIZED A GLOBAL WORKFORCE** online at www.cio.com/inprint.

CIO.COM

Support People, Not Process

To remedy these problems, Align invested in a process execution system to ensure consistency and move cases swiftly. The transformation reduced cycle times and achieved near-perfect

shipment reliability. But more important, the company also used the system to enable closer relationships between doctors and technicians by automatically matching technicians with specific doctors. With improved consistency and reliability in the production process and one-to-one rapport with technicians, the doctors gained trust in the process, making them more willing to partner with Align.

Projects that attempt to roll the work of global teams into standard processes may miss the unique requirements of different regions.

Similarly, BAE Systems Regional Aircraft found that effective global processes must maximize contributions from all participants. The U.K.-based company provides postsale support for regional airlines (including Emerald Airlines, Swiss and Air Wisconsin) operating more than 1,100 aircraft around the globe. Among its activities, BAE Systems develops maintenance procedures for each plane model. These procedures evolve as experience with each aircraft accumulates.

Updating the procedures was labor-intensive, typically involving long meetings at BAE Systems headquarters in Scotland, where company representatives, aircraft operators, and regulators gathered to discuss and approve changes. The process was often bogged down by small issues, each of which required discussion. As a consequence, fewer new maintenance procedures were approved, making the planes more expensive to operate.

To enhance the productivity of these meetings, BAE Systems introduced collaborative software into its review process. The software allows discussion of proposed maintenance changes online as a stream of individual items, rather than discussing a large group of items at once. In this way, the group achieves wider participation from the far-flung operators while reducing the time involved. The group still meets face-to-face but uses the meetings to debate the more complicated changes. BAE Systems is better able to capture the customer voice, improving safety and reducing the total cost of ownership for its airplanes.

The lesson is that process transformation must enable—not automate—collaboration. The companies that master this challenge will reap the rewards of globalization. **CIO**

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Future-Proof

Aligning business and IT is more critical than ever. **Are you ready?**

"Rapid technological advances and ever-changing business conditions are driving companies to continually evaluate their server infrastructure. Companies want to better leverage their IT investments for performance and efficiency, as well as to drive down costs. In order to achieve these goals, many companies have chosen to simplify their IT infrastructures by migrating to a standardized platform."

— Matthew Eastwood
Program Vice President
Enterprise Platforms Group
International Data Corporation

How do you extend your IT solutions for the future and stay ahead of your competitors when as much as 90% of your IT budget is dedicated to maintaining legacy infrastructure? Whom can you trust to help reduce your data center complexity and transition it to more productive, modern and less-expensive solutions? How can you improve agility, reduce risk and even capitalize on a climate of increasing change? These are just some of the challenges you face as a CIO striving to deliver solutions that will make your company more profitable.

There's a major transition under way in the IT industry that directly addresses these challenges. Standards-based server solutions can now handle the most demanding enterprise applications and workloads, at lower cost and with greater flexibility than proprietary RISC and mainframe systems. This fundamental shift in computing capability is helping many of the world's largest companies substantially reduce IT costs and future-proof their data centers by establishing a more flexible, standards-based infrastructure that can be scaled up or down easily in response to business needs and market dynamics.

HP, Intel and Microsoft: The New Standard for Data Center Computing

Enterprise server solutions from HP, Intel and Microsoft are at the center of this industry transformation. HP Integrity servers with 64-bit, dual-core Intel® Itanium® 2 processors and Microsoft® Windows Server™ 2003 not only cost less than traditional enterprise systems — they also deliver comparable or better performance, scalability and availability to meet the needs of your most mission-critical applications. HP, Intel and Microsoft server solutions provide savings over time through simplified management, low-cost upgrades and increased availability. Standardizing and consolidating both new and

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Customers worldwide are leveraging the technology and expertise of three of the world's leading IT companies, HP, Intel and Microsoft, to benefit from innovative yet proven standards-based solutions while minimizing their business risk. Are you ready to join them?

To find out how solutions from HP, Intel and Microsoft can help future-proof your company, visit www.futureproofnow.com



Your Business

Sydney Opera House Builds for Future Success

The Sydney Opera House is one of the world's most recognized architectural icons, and the IT group at Sydney Opera House has turned the vision of an adaptive enterprise into reality. Sydney Opera House was ready to utilize IT for greater productivity beyond selling tickets to arts patrons. The opera house wanted a new system that would enable patrons to easily and reliably order tickets online — even if demand spiked for popular performers. Sydney Opera House also wanted deeper insight into its patrons through sophisticated customer relationship software, while reducing the number of systems it had to manage.

By choosing an HP solution with Intel and Microsoft technology,

Sydney Opera House was able to meet its goals and position itself for long-term success. Using built-in virtualization technology, the opera house can transparently add capacity to handle heavy concert schedules and peak ticket demand. Standardizing on the Windows Server platform simplified integration with Windows front office systems and allowed applications to extend seamlessly to Internet and extranet scenarios. Ultimately, the servers support specialized customer relationship software that enables Sydney Opera House to better understand its customers and cater to their preferences.

Moving to an Intel Itanium 2-powered HP server with Microsoft Windows Server 2003 Enterprise Edition can empower *your* organization to gain the maximum benefits from IT — both today and into the future. ■

Future-Proofing at Work: Sydney Opera House

Because the Sydney Opera House, one of the world's most dramatic venues, hosts more than 2,400 events annually, online ticketing efficiency is critical. To modernize its computing platform, Sydney Opera House moved to a next-generation ticketing system on Itanium®-based HP Integrity servers running Microsoft® Windows Server™ 2003 and SQL Server™.

The new system "delivers reliable performance beyond our expectations," says Claire Swaffield, chief information officer for Sydney Opera House. The system has also enabled Sydney Opera House to boost online ticket sales, manage resources more effectively and improve its online services — all on an affordable, standards-based platform that delivers better value for every dollar spent.

Challenges

- Enhance the customer experience
- Build stronger patron relationships
- Create a more reliable, unified and robust ticketing system
- Provide the scalability and rock-solid availability needed to support revenue-critical applications for Sydney Opera House and its partners

Solution

- HP Integrity servers with Intel® Itanium® 2 processors
- HP ProLiant servers with Intel® Xeon® processors
- Microsoft Windows Server 2003 Enterprise Edition
- Microsoft SQL Server 2000
- HP management software
- Tessitura software

Results

- Greater simultaneous sales and transaction throughput
- Better reliability during online sales transactions — even during peak activity
- True 24x7x365 system availability
- A scalable, standards-based platform for sharing online ticketing capabilities with multiple partners
- Record-breaking transaction-processing performance
- Simplified management, consolidation and growth through the creative use of virtualization
- More business value for the IT investment

To find out how to extend volume economics to your most mission-critical computing, visit www.futureproofnow.com





SPECIAL
REPORT

Why Green Is Better

There's a sweet spot where
good ethics meet good business.
And IT can—and should—
be sitting at the nexus.

BY ELANA VARON

THE REPORT ON GLOBAL WARMING

issued in February by the United Nations' Intergovernmental Panel on Climate Change concludes unequivocally that our planet is getting hotter. And, as we approach Earth Day April 22, the evidence that it's all our fault is stronger than ever.

As we go about our busy lives, running our ever more powerful, ever more ubiquitous computers, we are effectively turning up the planet's thermostat. Gartner estimates that carbon dioxide emissions related to the operation of servers and PCs account for 0.75 percent of the annual global total, and that's *before* factoring in emissions generated by cooling the boxes. Add to that the emissions generated by telecommunications networks, and IT's contribution to the atmosphere's greenhouse gas load is "probably in excess of 2 percent," says Simon Mingay, research vice president with Gartner, adding that that's "a big number for what is essentially a single device." In fact, emissions tied to that device, the computer, are comparable to the level of greenhouse gasses being produced by all the world's airplanes as they crisscross the skies above us.

Now what are CIOs doing about that?

Green Goes Mainstream

Companies today face a panoply of environmental issues, from how much electricity they consume (produced by power plants that run on fossil fuels) to how they deal with toxic wastes. But in most enterprises the CIO has played a minimal role in decisions that affect the environment. For the most part, no one has asked them to do anything more.

But sooner rather than later, someone—your boss, a big customer or a government agency—is going to want to know what you're doing to comply with, support or advance your company's efforts to become more environmentally responsible. This demand will not stem merely from an altruistic desire to behave responsibly (although that's a fine reason); rather, corporate sustainability (as being cognizant of your impact on the planet is now called) has become a cost of doing business. Global regulations that put limits on toxic chemicals and emissions now reach from the manufacturing floor into the data center.

And having an understanding of and an appreciation for one's effect on the environment increasingly is proving to be good for the bottom line. A recent report concluded that there's a direct correlation between good environmental practices and sound overall management. The report's authors—Marc Orlitzky, a

lecturer with the Australian Graduate School of Management, and Frank L. Schmidt and Sara L. Rynes, both professors with the University of Iowa—say good corporate citizenship can help companies build the skills and infrastructure they need to cope in turbulent times, as well as improve efficiency.

Daniel Esty, director of the Center of Business and Environment at Yale University, points to a multitude of examples in which employing IT that attends to the planet helps companies cut costs or raise revenue. "One of the key tools that companies have used to develop an eco-advantage is good data collection," says Esty, coauthor, with Andrew Winston, of *Green to Gold: How Smart Companies Use Environmental Strategy to Innovate, Create Value and Build Competitive Advantage*. "Having a strong set of metrics and indicators allows companies to manage inputs

better, reduce waste and achieve higher productivity," Esty maintains.

The Cost-Benefit Analysis

Charity begins at home, and the CIO's responsibilities start with the IT department. According to Gartner, the pervasiveness of computing equipment in most companies makes the IT department a major source of negative environmental impact.

Mitigating that impact will have its cost. All your hardware contains toxic materials that in many places must be recycled. The European Union recently toughened regulations for disposing of old computers; other nations and many U.S. states also have rules

for recycling electronics. Meanwhile, new equipment, designed to be energy efficient and comply with regulations for use of toxic substances, may become more expensive if vendors decide to charge a premium for green products.

But the good news is that every company with a data center has a vein of green waiting to be mined. "Any organization that wants to improve its environmental footprint is going to look at power consumption," notes Mingay. "If the company is a professional services, banking or insurance kind of business, IT will probably be the biggest consumer of power by a long way."

Fixing the Data Center

As Senior Editor Stephanie Overby writes in "Clean, Green Machines,"

Emissions tied to computers are comparable to the level of greenhouse gasses being produced by all the world's airplanes as they crisscross the skies above us.

Reader ROI

- :: Why the costs of ignoring the environment are rising
- :: Where energy-responsible practices can cut costs
- :: How IT can lead the effort for corporate sustainability

Page 36, data centers consume between 1.5 percent and 3 percent of all the power generated annually in the United States—at the high end, that's equivalent to the electricity needed to power the state of Michigan for one year. But most IT departments don't have a good grasp of their electricity bills because they don't control the facilities their data centers occupy. One company, VistaPrint, where the IT department does manage its data center facilities, discovered that its electric bill was projected to skyrocket if the company, which sells custom printed products online, grew as predicted.

When Cable & Wireless, which hosts one of VistaPrint's data centers, threatened to charge the company extra to cover the cooling costs for its blade servers, then-CIO Wendy Cebula (now the company's COO) asked her IT operations director to improve energy efficiency. The project eventually led to the construction of a second, more energy-conscious data center in Canada, where hydropower provides a renewable, lower-emissions source of electricity. The company now projects savings of 70 percent on its electricity bills. It will also save \$450,000 annually by replacing its blade servers with virtual machines that use more server capacity and consume less power. Within a year, VistaPrint will be reducing the emissions from its data centers to a degree equivalent to taking more than 100 cars off the road for a year.

VistaPrint has benefited in part from the increasingly heated competition among chip makers and server vendors to out-green each other. But which server provides the greatest power consumption savings for the buck depends on how you plan to use it. Existing benchmarks that measure application performance or CPU utilization aren't much help because they don't measure power consumption, notes Brent Kirby, a product manager with AMD. Groups including the Standard Performance Evaluation Corp. and the U.S. Environmental Protection Agency are researching a new generation of benchmarks that address server electricity usage, while an effort among computer manufacturers known as The Green Grid aims to identify best practices for data center power management.

Meanwhile, using more efficient cooling systems, or simply sealing holes in your data center's floor, can reduce energy consumption and, ultimately, greenhouse gas emissions. Your company wins by lowering its energy costs, and the planet wins too.

The Green Advantage

IT's contribution to corporate sustainability doesn't stop at the data center door.

Data centers consume between 1.5 percent and 3 percent of all the power generated annually in the U.S.—at the high end, that's equivalent to the electricity needed to power Michigan for one year.

New and anticipated environmental regulations are prompting companies to reexamine everything from their business processes to their product lines.

As Associate Staff Writer Katherine Walsh writes in "Can IT Make Your Company Green?" Page 45, companies are beginning to pay more attention not only to what goes into their products but how those products are made. And whether they're tracking systems for monitoring plant emissions, using databases to analyze material use or implementing operational controls, they need IT to do it. These systems can pay dividends beyond keeping companies out of legal trouble, or having their noncompliant products barred from global markets. At Dow Chemical, CIO David Kepler says technology investments that monitor energy use have saved Dow billions.

Other systems are expected to generate top-line revenue growth by helping companies make better products. Both furniture maker Herman Miller and Timberland, which makes outdoor apparel, cater to environmentally conscious customers (and satisfy regulators) by developing products using recycled materials and eliminating toxics from their production processes. IT integrates the databases that track the use of materials with those that manage the production processes in order to optimize the efficiencies the companies reap from these green initiatives.

You have an advantage if your company has already made environmentally sound practices a priority. In Chicago, the law firm Kirkland & Ellis is constructing a green building, with design parameters that include lower power consumption and more efficient air conditioning. (To see the specs for the building, read "Designed for IT," www.cio.com/inprint.)

"There are regulations, there are savings to the firm and there's just being a good citizen," says Kirkland & Ellis CIO Steve Novak. "If there's any way you can reduce consumption, it's good for all."

If your company has not embraced its environmental responsibilities, it's only a matter of time before it will be forced to or suffer the consequences. "Green issues are going to be climbing up the consumer and investor and media agenda," notes Gartner's Mingay. "At some point in time, this increased focus is going to affect the enterprise."

The question CIOs have to answer is, Will you be ready? **CIO**

More About Green IT

For additional information about **HOW I.T. CAN HELP THE PLANET** go to www.cio.com/inprint. **CIO.COM**

Executive Editor Elana Varon can be reached at evaron@cio.com. To comment on this article, go to the online version at www.cio.com/inprint.

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Clean, Green Machines

When VistaPrint revamped its data centers to contain rising energy costs, the company helped the planet along with its bottom line

BY STEPHANIE OVERBY

LAST SUMMER when Wendy Cebula was shopping for a new vehicle, energy efficiency and lower emissions topped her list of requirements, along with four-wheel drive (her family lives on a hill). Cebula, then CIO at VistaPrint, a \$152 million online supplier of custom print services, eventually chose a hybrid model instead of the traditional SUV. Even though she didn't think the incremental savings on gas would make up for the higher sticker price, she says "it was the right thing to do as a human being."

But as a corporate executive, Cebula, now VistaPrint's COO, can't lead with her heart. The right thing to do is whatever enables the business to grow. Those decisions come down to dollars and sense, not what's best for the planet. But every now and then, the two converge.

In late 2005, Cebula noticed her data center's costs were growing. The company, whose operations are almost completely automated, was adding 100,000 customers a month—and growing at nearly 60 percent a year. There was no sign the demand for data necessary to serve those customers would stabilize. When Cebula and Aaron Barnham, VistaPrint's vice president of technol-

Aaron Barnham, VistaPrint's vice president of technology and operations, and COO **Wendy Cebula** used virtualization to cut data center energy costs.

Reader ROI

- :: How green data centers save money
- :: Ways IT investment decisions affect the environment
- :: Strategies for reducing power consumption

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ogy and operations, dug into data center operations in detail, they discovered that energy costs were rising significantly.

If there were some way to lower power costs or increase energy efficiency, they could cut expenses. To Cebula, an avid recycler who tries to impart environmental awareness to her kids, doing so would be a double win. She could do "what's good for the environment and what's good for the bottom line," she explains.

Until recently, the environmental impact of the data center was largely ignored. But today, energy experts estimate that data centers gobble up somewhere between 1.5 percent and 3 percent of all electricity generated in the United States. At the top of the range, that's about the amount of electricity it takes to power the entire state of Michigan for a year. Market

research company IDC (a sister company to *CIO*'s publisher) estimates that companies spent \$26.1 billion to power and cool servers worldwide in 2005. That's more than was spent to power all the commercial buildings in 17 states—from Delaware to Florida and west to Texas, according to the Department of Energy's most recent energy consumption survey.

And that's not all. According to the Uptime Institute, a consortium of companies devoted to maximizing efficiency and uptime in the data center, more than 60 percent of the power used to cool equipment in the data center is completely wasted. In fact, notes a recent study by the group, energy costs have replaced real estate as the primary data center expense. "Data centers that used to cost \$10 million now cost \$100 million," says Jona-

than Koomey, staff scientist at Lawrence Berkeley National Laboratory. "That kind of expenditure gets C-level attention."

It's garnered government interest too. A federal law enacted in December compels the U.S. Environmental Protection Agency to examine power consumption in data centers, evaluate what technology manufacturers are doing to increase energy efficiency and determine what incentives could convince companies to adopt more energy-efficient technology. The European Union is studying the level of carbon emissions from computer equipment. Down the road, local and federal governments in the United States and abroad may end up penalizing organizations that operate inefficient data centers, according to Rakesh Kumar, Gartner research vice president.

Fresh, Green Tech

Tools that can reduce your contribution to global warming

Power-conscious chips:

When it comes to energy efficiency, AMD has dominated a two-horse race with Intel, increasing the number of cores in its Opteron chips while holding power consumption steady. Intel also markets its Xenon line of energy-efficient server processors and recently announced it will begin making chips using a new insulating material that consumes less electricity, generates less heat and delivers faster processor speeds. Now a startup, P.A. Semi, is getting into the

act with the development of its family of 64-bit, dual-core PWRficient processors. The company claims its chips will be three to four times more energy efficient than competing products.

Energy-efficient servers:

Thermal engineering—once an afterthought—has become a critical limitation for servers. Manufacturers such as IBM, Hewlett-Packard and Sun Microsystems have taken steps to redefine system design and improve internal blower and fan technologies.

IBM touts its System z mainframe as a power-efficient alternative to high-density x86 servers for Linux applications. Sun, meanwhile, says its Niagara servers use half the power and offer three times the performance compared with competitors' machines.

Better cooling and power

supplies: Power supply vendors such as APC and Emerson and HVAC manufacturers including SprayCool and Cooligy (which is owned by Emerson) are developing products that target global warming. These include systems that use carbon dioxide for cooling (in place of more harmful refrigerants), direct-current power supplies (more efficient than converting alternating current from the electrical grid) and more efficient in-chassis, in-rack, in-row cooling products.

Green design: Server manufacturers and IT service providers have ideas for more efficient data center designs. HP is working on a next-generation modular data center prototype that incorporates virtualization and a closed-loop cooling system, among other features. Sun Micro-

systems is touting its Project Blackbox, a virtualized data center built into a shipping container and optimized to deliver energy, space and performance efficiencies. In addition, a who's who of data center vendors is sponsoring a nonprofit IT user group called Green Grid, which focuses on best practices for managing data center power and cooling issues.

Financial incentives: Customers of Pacific Gas & Electric are eligible for a rebate of up to \$4 million for virtualization projects that consolidate servers. The California utility also offers cash rebates for the installation of other energy-efficient products such as servers and HVAC equipment. The EPA is studying what other incentives might encourage businesses to adopt eco-friendly technologies. —S.O.

The combination of financial, environmental and legislative pressure will force IT organizations to develop greener data centers, says Kumar. By 2011, Gartner predicts, a quarter of new data centers will be designed for maximum energy efficiency and minimum negative environmental impact. But what that means may vary by organization. "There's no generally accepted, standardized way to build a green data center," says Kumar.

At VistaPrint, becoming green has proven easier than Cebula thought. The company bought more energy-effi-

cient servers and improved utilization in its primary data center in Bermuda, steps that have reduced energy usage by 75 percent. As a result, the company expects to save nearly half a million dollars over three years and estimates it will reduce its output of carbon dioxide emissions by several hundred tons in this year alone. That's equivalent to taking more than 100 cars off the road for a year.

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office space and moved a few miles north to a Lexington, Mass., location eight times larger. During those years, the company focused on automating and optimizing the product design and manufacturing process at its Venlo, Netherlands, plant. The only concern when purchasing equipment—whether for the company's main Bermuda data center (which runs VistaPrint's website and transaction systems and is hosted by Cable & Wireless) or for the one in Lexington (which supports internal systems and IT produc-

tion)—was that the equipment work. As a result, VistaPrint procured a hodgepodge of servers: back-end systems, front-end systems and databases each ran on different gear, says Cebula. By 2004, VistaPrint got caught up in the blade craze, purchasing machines from IBM.

In the fall of 2005, shortly before Cebula became CIO, VistaPrint's then-COO, Alex Schowtka, hired Barnham as director of IT operations. Barnham thought blades were a mistake. The problem was the total power pull. "Blade servers look great on paper," Barnham says, "but you start piling them into a rack and suddenly you're out of power, you're out of AC."

VistaPrint wasn't the only company that was getting burned by its decision to buy high-density equipment. With quality data center space priced at a premium, companies sought out more compact gear, and vendors happily obliged. "The focus was on getting as much computer power in as small a package as possible," explains Gartner's Kumar. "Energy was not part of the design mentality."

But blade servers need more power than less-dense hardware. A full rack of high-density servers requires 20 to 30 kilowatts of electricity, while traditional data centers are designed to provide 2 to 3 kilowatts per rack. Meanwhile, accord-

ing to the Uptime Institute, using high-density equipment triples or quadruples facility cooling costs. Energy prices have risen as well.

CIOs who assumed that data center costs would decline as servers got cheaper and more powerful received a rude awakening. In what Kenneth Brill, founder and executive director of the Uptime Institute, calls "the meltdown of Moore's Law," the energy required to power and cool \$1,000 worth of server equipment has skyrocketed from 8 watts in 2000 to 109 watts today—eroding some of the benefits from more powerful chips. In the best-case scenario, says Brill, within five years it could take 157 watts to run the same \$1,000 worth of hardware; in the worst case, 1,650 watts. In fact, the blade server's selling point—its size—has become irrelevant for some customers. Data center operators find themselves using only two servers in a rack designed for 10; packing any more than two high-density servers in a rack makes them too hard to cool.

That was VistaPrint's quandary. It was the first Cable & Wireless customer in the Bermuda data center to install blades. And the outsourcer was none too thrilled. Cable & Wireless wanted to limit VistaPrint to one blade server per rack. VistaPrint got the vendor to agree to placing two servers per rack, but talk started of an energy surcharge. For years, most outsourcers charged for data center space based on square footage—a metric that did not take into account electricity costs. As a result, says Lawrence Berkeley's Koomey, the outsourcers created a perverse incentive. "If you charge by the square foot, of course the customers want fully packed racks," Koomey says.

A Virtual Solution

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print company. But once you get inside and see what's really going on, it's really a technology company," Barnham says, noting that everything from sales to manufacturing to shipping is run largely on custom-built software. "At Monster," says Barnham, "we weren't anywhere near this data-focused."

Like Monster in earlier days, VistaPrint wasn't making the most efficient use of its data center. "They picked technologies that were right at the time, not right for where they were going," Barnham knew that virtualization would reduce power consumption. But Cebula knew that she wouldn't convince anyone to spend more money on servers without a solid business case. So Barnham ran the numbers, focusing on power expenditures.

Calculating the total energy consumption of a server isn't straightforward. How much power a server consumes depends on how you use it. "It's not something that our vendors talk about a lot," says Cebula. The vendors were, nevertheless, able to provide data when asked. Using that information, Barnham made the case for a greener data center crystal clear.

Barnham calculated that if VistaPrint continued to use blades, this solution (conceived of as four racks housing eight IBM blade servers) would eat up approximately 32,000 watts (4,000 per server) and require 9.1 tons of air conditioning to cool. He estimated that the alternative, using eight HP Proliant DL 585

rack-mounted servers and 110 VMware instances, would require 5,500 watts (50 watts per virtual machine) and just 1.6 tons of AC. In addition, virtualization would enable VistaPrint to make better use of its CPU capacity. As is the case in many companies, VistaPrint was wasting additional energy by using only 20 percent of its server capacity. In a 24-hour period, the typical x86 server is used to only 5 percent or 10 percent of its capacity, says Gartner's Kumar, while energy consumption even in idle mode is 60 percent to 80 percent of the energy consumed in use.

But the development team was concerned about stability and performance in a virtual environment. A year earlier, the IT group had attempted virtualization on the blades. Running VMware on the high-density hardware had been a bust. Memory limitations on the blades limited performance and the number of instances that could be run on each server. So when Barnham used the "V"-word again, the development group got nervous. Barnham won them over with a pilot project that proved the performance case.

Swapping in the new servers in the Bermuda data center would mean eating the investment VistaPrint had made in the blades. But Cebula and the executive management team couldn't argue with the ROI. Over three years, the greener solution would save VistaPrint \$450,000—more than the cost of the hardware refresh.

Cleaner, Cheaper Electricity

By the fall of 2006, competition over parking in VistaPrint's Lexington lot led its leaders to conclude it was time to move again, to a bigger space across the street.

As part of its earlier move in the summer of 2004, the company had inherited a data center in the basement of its existing building. The "free data center," as Barnham calls it, housed 18 racks of equipment by the time he arrived. Most of the gear was used for internal IT systems and development. They'd probably want to move that operation across the street with them. Or would they? The rework of the data center in Bermuda got Cebula and Barnham thinking. If they could cut energy costs by making different gear choices, was there anything to be gained by moving the bulk of the Lexington data center elsewhere?

While researching the Bermuda data center revamp, Cebula had learned that the power market in Massachusetts was perhaps the most expensive one in North America. "Outside of maybe Hawaii," she adds. "Doing those cost comparisons opened our eyes and got us to run some of the numbers on power at different possible locations."

VistaPrint had recently opened a 68,000-square-foot manufacturing facility in Windsor, Canada, which could be expanded to accommodate a 100-rack data center. Cebula charged Barnham with creating a business case for three options: building the new data center in the new Lexington space, building it in Windsor, or outsourcing it.

Unlike most IT departments, VistaPrint had all the information it needed to make the analysis—from real estate costs to electric bills—at hand. The majority of IT shops are in the dark about their data center energy costs because facilities management pays the bills. Facilities and IT tend to operate on different planes. "Facilities people know how much power is being used, but they don't know anything about the equipment," says Koomey. The result is what the Uptime Institute's Brill calls "the invisible crisis." IT has little incentive to make more conservative

The Paths to a Greener Data Center

1

Deploy virtual machines. Virtual servers save energy by enabling greater utilization of CPU capacity.

2

Use cleaner power. Factor the source of electricity into decisions to site new data centers. For example, hydroelectric power generates fewer emissions—and costs less—than power plants run on fossil fuels.

3

Buy energy-efficient equipment. Consider, for example, how much power a server will consume when you calculate the total cost of ownership. Vendors may not offer this information in their marketing materials, but you can ask them for it.

"The great leaders are like the best conductors — they reach beyond the notes to reach the magic in the players."

— Blaine Lee,
The Power Principle

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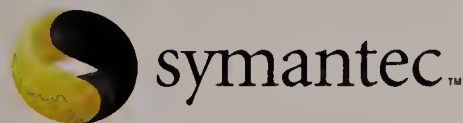
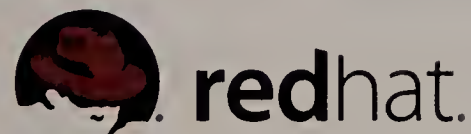
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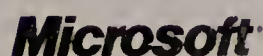
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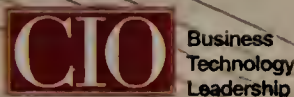
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choices about power consumption, and the results are not sustainable. AFCOM, an association for data center professionals, predicts that power failures or power limits will halt data center operations at more than 90 percent of companies over the next five years.

"Not a lot of IT people get down into the building of data centers," admits Barnham. "We definitely understand the total cost perspective," says Cebula. "But even we were a bit surprised when doing the

prices, Barnham figured he would save more than \$130,000 a year by locating in Canada. Those cost savings would improve as VistaPrint added racks to the facility—a near certainty at its current growth rate. Coupled with the discount on real estate, the Windsor option proved 10 percent cheaper than outsourcing—even with the capital expenditures.

Not everyone can just up and move a data center to a cheaper real estate market with a renewable energy source. "Banks,

process has a payoff for everyone. Some of the new, environmentally friendly innovations in cooling technology, heat transfer and power supply for the data center (see "Fresh, Green Tech, Page 40) didn't make the list at VistaPrint. "I did look at the price for a natural gas generator," Barnham says. "But the prices for natural gas fluctuate widely. Most people stay with diesel."

Determining the environmental benefits of VistaPrint's data center revamp is hard because of the complexities in how power is produced and consumed. But based on a model for calculating carbon emissions offered by Lawrence Berkeley, an average U.S. company that cuts its electricity consumption the way VistaPrint did in Bermuda would reduce its carbon emissions by nearly 612 metric tons.

Meanwhile, the benefits of VistaPrint's data center changes go beyond saving money or saving the planet. Server standardization has made maintenance and upgrades easier. It's also made IT more responsive to business needs. It used to take days to provision a new server in Bermuda. Now it takes minutes. "The business is much more satisfied with the time it takes to make changes or get new capacity," says Cebula. "And with our better failover capabilities, we have fewer reductions in service."

VistaPrint recently had a VMware server go down in Bermuda, and all the instances that were running on it restarted on another server. Total downtime was less than 10 minutes, with no human intervention. The business doesn't understand why service is better, says Cebula, "but they understand the better service." And the money IT might have been throwing away on sky-high electric bills in Massachusetts can be fueled into more sound IT investments.

"Green isn't costing us money. Green is saving us money," says Barnham. "Interests are aligned." **CIO**

The benefits of VistaPrint's data center changes go beyond saving money or saving the planet. Server standardization has made IT more responsive to business needs.

analysis of actual energy consumption."

Barnham's analyses revealed some good news. Real estate costs would be cheaper in Canada (\$7 per square foot in Windsor versus \$27.45 in Lexington). But Windsor was a greener pasture in more ways than one. VistaPrint's manufacturing facility is run on hydroelectric power, a renewable energy source that doesn't entail fuel costs and comes at a lower and more stable price. (In the Boston area, electricity comes largely from generation facilities that run on coal, oil or nuclear power.) That's why data hogs like Yahoo and Google have recently begun building operations in the Northwest near the Columbia River, a source of hydroelectric power. "Any small difference in energy consumption or energy costs can make quite a difference," says Kumar. Hydroelectric power also creates little air pollution because, unlike fossil fuel-fired plants, it does not generate carbon dioxide. Even nuclear plants generate some thermal emissions.

Sure enough, thanks to a 12-cent per kilowatt-hour difference in electricity

for example, may need to be in downtown Manhattan or central London," says Kumar. "But what [VistaPrint is] doing makes a lot of sense for them."

The Benefits of Green

The Bermuda project (which was completed at the end of last year) enables VistaPrint to shave 25 percent from its future hosting costs. And VistaPrint's Windsor data center is scheduled to open this month. Barnham plans to move many of the systems hosted in Lexington there (where the new virtual machines initially will occupy 10 to 12 racks), and the facility will also provide disaster recovery for the Bermuda data center (a service the company outsourced to Cable & Wireless).

Cebula says VistaPrint is trying to make other eco-friendly choices, outside of IT. For example, the company bought an extraction system for its plant that recovers more paper waste, which VistaPrint can resell to recyclers. "What we're finding is that the right thing to do environmentally and the right thing to do financially often go hand in hand," she says.

Some green options, like the new servers and the paper waste extractor, may involve up-front costs, Cebula says, but they usually pay for themselves and reap returns (such as revenue from reselling the excess paper and lower energy costs). Of course, not every green product or

How Green Is Your IT?

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Can IT Make Your Company Green?

Whether corporate sustainability initiatives stem from regulatory compliance or aim to boost the bottom line, IT plays a key role in supporting such efforts according to environmental IT experts from three companies

AS TOLD TO KATHERINE WALSH

THE EXPERTS

David Kepler
CIO, Dow Chemical

Mike McCluskey
Project Manager,
Product Development IT

Gabe Wing
Chemical Engineer and
Manager, Design for the Environment

Herman Miller

Rosalee Hermens
CIO, Timberland

Mike McCluskey and Gabe Wing

SOCIAL RESPONSIBILITY is at the core of Herman Miller, dating all the way back to its founding. The first formal environmental statement dates back to 1953. Design for the Environment (DFE) was formed in 2001 in order to create a more sustainable design process for our office furniture. DFE is the group charged with developing products that are as sustainable as possible.

You couldn't do that without informing designers about the chemistry and the sustainable properties of the hundreds of materials they use. Our materials database, which we created using Microsoft Access, captures information on the materials we use, where the reliable sources for those materials are and communicates that to the design team.



The IT function and IT support is vital to that process.

The database is also Web-enabled, which makes it easily accessible to our designers, all of whom are independent contractors. That's the main driver behind Web accessibility, but customer demand is also important. About 90 percent of all questions we receive from customers are about the recycled content in our products, how recyclable the product is and where it is sourced. It's important that our customer response teams have access to the data so they can report it to our customers. About three years ago, we put that database into our ERP system.

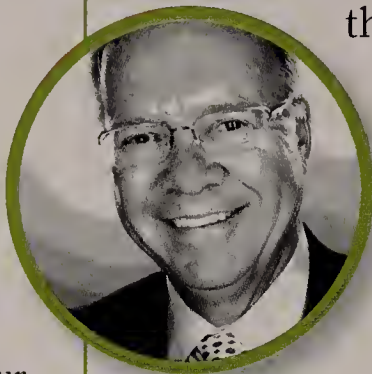
Herman Miller is well-positioned right now to comply with Reach and another E.U. regulation, Restriction of Hazardous Substances (RoHS) requirements. [Reach, which stands for Registration, Evaluation and Authorization of Chemicals, is a European Union regulation that goes into effect in June 2007 that requires manufacturers to register information about the substances they use in a central database. RoHS limits the amount of toxic chemicals that a product may contain.] The purpose of DFE has been to control the chemicals in our products by identifying chemicals of concern and eliminating them. We've already started an extensive inventory of our products and have begun phasing out components we feel are problematic. So we're one step ahead.

Our ability to comply with regulations is going to become increasingly important as we move forward. For instance, we have a European-based manufacturing site for which Reach is going to have implications. We also export seating products to Europe from the United States, and the European regulations require that we track the chemicals in those products.

Right now our challenge is one of integration. We have certain data in one environmental database and bill of materials data in another, and we've got our ERP system. They're almost able to be integrated, but not quite. I don't think we imagined these things would necessarily have to be integrated together, but it's important that they are. If we pull this information together it will make our efforts more effective.

David Kepler

TO ME, SUSTAINABILITY is about the world and our contribution to some of its challenges. Ten years ago we set environmental and safety goals around things like injury and illness, process safety and chemical emissions. We have made significant progress: One of our goals was to reduce our energy consumption by 20 percent, and we reduced it by 22 percent. We also achieved an 84 percent reduction in emissions.



We expanded beyond those initial goals recently with Dow's 2015 Sustainability Goals. We intend to improve our environmental health and safety performance by 75 percent within the next eight years. IT touches on almost every one of our goals. For example, IT is charged with creating databases to track environmental activity—measuring our emissions, tracking the safety and performance of our carriers, and managing our contractors. IT not only manages the information but it serves as a watchdog.

Dow's current process control automation at its plants is so stringent that these systems will shut a plant down if it is not compliant with air and water emissions requirements. This technology allows facilities to operate compliantly at all times. Dow also uses a real-time monitoring system to measure the air and water emissions at its plants, and we are implementing an environmental reporting system that manages reporting of emissions data to state and federal authorities. Some of Dow's locations in North America

employ this reporting system now, and the North American rollout of this system will be finalized by the end of 2007. It will be implemented globally over the next several years.

IT also helps provide safety assessments for all of Dow's products. We are taking the Reach concept a step further. Dow's Sustainable Chemistry goal is about creating products in more sustainable ways—which includes increased energy efficiency, increased efficiency of material use, decreased use of scarce resources, decreased emission of man-made substances to nature, and improved social, health and security risk profiles.

We will ultimately provide our stakeholders with key information related to the safety and risk of every chemical from Dow. To meet our goals relative to Reach, Dow will develop an integrated database that tracks consumption, usage and loss of a given base material that makes up bigger products to do a net balance across the entire lifecycle of a product. This database will allow Dow to better understand how materials are consumed during manufacturing. We started to gather information on 15 products this year. There's another 50 to go next year, and by the end of 2015 we want information on all our products out there transparently. Using SAP's environmental health

The Profit in Green

Find out more about **HOW I.T. CAN ENABLE PLANET-FRIENDLY BUSINESS INITIATIVES** online at www.cio.com/inprint.

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and safety platform, we will make that information available on our website.

Regulations are a main driver behind these initiatives. Even though we've had environmental systems in place since the early 1980s and toxicology labs since the 1930s, the issues those systems are required to address change. So we come up with new environmental initiatives, and there is a lot of automation that goes into successfully executing them: Process control systems, monitoring systems, new interfaces—those are the pieces that IT has to upgrade. As we go forward, different regions and countries are going to mandate different things, and we are going to have to comply with those regulations in addition to our own environmental agenda.

However, in our progress toward our 2005 goals, we also realized great savings from better use of our resources, including energy efficiency. For example, we estimated we would spend \$1 billion on technology and processes to save \$3 billion. However, our actual savings were closer to \$5 billion due to the rise in energy costs. Given the magnitude of the savings, our modest investment in IT solutions such as the Global Emissions Inventory or Global Incident Reduction Database would suggest a very high return on investment.

Many of our 2015 goals are related more to top-line growth than bottom-line cost reduction, so it's tough to assess their impact at this point. But some of the new IT tools and systems, including an integrated Life Cycle Assessment database and decision tools, will go directly to our ability to achieve our growth and innovation goals.

Rosalee Hermens

OUR ENVIRONMENTAL APPROACH is pervasive throughout all aspects of our business, from making sure our products are made with materials that are environmentally friendly, to phasing out our use of PCBs in our products, to eliminating the use of solvents in the glues that we use to put shoes together.



We're building a new, consolidated bill of materials (BOM) system to keep better track of the materials we use in our products. That will allow us to phase out the materials we believe are hazardous and optimize our ability to move to other, more environmentally friendly, materials. The main driver behind phasing out hazardous materials is to provide better and safer products to our customers. As a company, we want to be environmentally responsible, but our customers are also demanding it.

In addition, the new BOM system will keep track of which products have Timberland's new "nutrition labels" attached to them and ensure that they are applied correctly. The nutrition labels are a way for us to reach our goal of telling our customers where every product is made and under what circumstances related to the environment and fair labor practices.

The nutrition labels feature three sections: The "Environmental Impact" reports the average number of kilowatt-hours that are used to produce a pair of Timberland shoes and the percentage of renewable energy Timberland uses from sources such as the sun, wind and water; "Community Impact" details metrics such as the percentage of children in a factory's workforce and the total number of hours Timberland employees volunteered [in the community] in the previous year; "Manufactured" tells the consumer in what factory and what country the product was made.

IT writes the programs to produce

the nutrition labels and get them affixed to the bill of materials. The information then goes to the factory, which produces the label and puts it onto the box. We worked with marketing to figure out what the labeling would look like. We also worked with our environmental staff to understand the content for a particular product.

We're also looking at how we can use less paper. One of our ideas in the pilot stage right now is to have individual mailboxes on our printers in order to eliminate printer waste. When an employee prints something, rather than it printing right away, the system will send it to her personal mailbox. She'll print the document only when she physically goes to the printer. This will also enable us to reduce our use of toner and printer materials, which are incredibly toxic.

In addition, our IT team worked as project managers on a volunteer project Timberland was involved in: building the Salisbury Rail Trail and cleaning up the Seacoast Science Center in Salisbury, Mass. This helped them gain project management skills, a critical part of IT. They had to create a project plan and an organization, recruit a team and get that team organized to do the work. They had to get the team their tools, communicate what needed to be done, keep them motivated, ensure safety, recognize contributions and do project wind down—all soft skills you need to manage an IT project well. **CIO**

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Unequal Act

BY BEN WORTHEN



Reader ROI

- ❖ How India's urban infrastructure problems affect customers in the West
- ❖ Why the government is trying to connect rural areas
- ❖ How to build a computer network with valuable services

CESS



India's urban infrastructure is at the breaking point, threatening its growth—and the fortunes of its many Western customers. The challenge is about much more than money: It requires addressing the frustrations of 700 million rural Indians who have been left out of the IT boom.

Electronics City is a glittering, 330-acre office complex just outside of Bangalore that exemplifies the technology boom that has remade India over the past 15 years. Over 100 companies have offices here, and the carefully manicured grounds at some of the bigger campuses could make the most coddled American developer jealous.

In an office whose expansive glass windows do daily battle with India's relentless sun and heat, Selvan D., senior VP for talent transformation for outsourcing giant Wipro, talks about how he is addressing the challenges of explosive growth. To tackle the issues of attrition (the turnover rate for the major outsourcing companies is in the mid-teens) and a potential labor shortage—he uses techniques like hiring and training people before they even graduate from college, bringing in 3,000 nonengineering students to learn about technology and offering an array of training programs for existing employees.

In the middle of D.'s explanation, the room suddenly goes dark—except for the glow of the computers, which are protected by generators. Yet D. continues talking without so much as batting an eyelash.

Outsourcing

It happens again a few minutes later and thus a Western reporter is introduced to one of the facts of life in Bangalore: Just as people who live in an oasis have to deal with the occasional sandstorm, companies in India's outsourcing industry still have to deal with, well, being in India.

Power problems are just the beginning. Office parks like Electronics City are reachable only by old roads that are forced to carry five times the traffic they were designed to. The result is that a six-mile commute takes more than 90 minutes. Competition on the roads is so cutthroat that most outsourcing companies hire drivers to shuttle all of their employees to work so that they will not arrive completely exhausted and stressed out. (Another major Indian outsourcing company, Infosys, is planning to build a new campus complete with housing so that workers can walk to work.) Power goes out so routinely in Bangalore that generators are considered a necessary expense for homes as well as businesses. And the airports look like relics from the 1950s.

"India's infrastructure has not kept pace with its growth," says Kris Gopalakrishnan, president and COO of Infosys. "[It] is a bottleneck to our growth."

Someone needs to pay the price for these problems, and that someone is you. Bad roads, power outages and vintage airports all add expenses, reduce productivity and increase turnover for outsourcing companies. These costs ultimately make their way back to the customer. As India's outsourcers become increasingly intertwined with the core business processes of their customers, their infrastructure problems will be felt in the West. CIOs need to understand the issues that affect their outsourcers' performance—and ultimately, their own.

The Hidden Obstacle to Modernization

The lack of infrastructure has urban India near a breaking point. But if it were simply a matter of money or willpower, India undoubtedly would be farther along the road.

Instead, the improvements are being held in check by those who have yet to see the benefits of globalization: rural India.

While India's economy has been growing at close to 10 percent a year, the growth has been confined to urban India. "Rural India, where 700 million people live, has been totally left behind," says Ashok Jhunjhunwala, a professor at the Indian Institute of Technology in Chennai. A Wipro employee in Bangalore can log in to a server in the United States to do work for a customer, but that same employee probably can't call his parents in his home village—just 20 percent of rural villages are reachable by phone cable, and just over 5 percent of Indians have a landline. In other words, while the world may be flat, India isn't.

I.T. IN THE JUNGLE

Most technologies were not designed with the challenges of rural India in mind. Here's how the government is trying to overcome them.

Rural India is one of the most isolated places on earth. Yet the Indian government has decided that the future of the country depends on bringing the people who live there into the information economy. It won't be easy. Here is a look at the strengths and weaknesses of five technologies that can help connect rural India to the Internet.

CDMA: This is a fancy way of saying the cell phone network. It is cheap and easy to put up a cell phone base station, and, as a result, rural India has surprisingly good cell coverage. Unfortunately it doesn't really work for data transmissions and a 3G network that could work is still years away.

DSL/Cable: This is a fast and cost-effective solution, at least in places where it is an option. But only about 5 percent of rural citizens in India have a telephone.

Wi-Fi: Some states in India are building Wi-Fi towers in order to broadcast wireless Internet signals. But the signals are weak and don't reach very far, making it an inefficient solution.

Wimax: Wimax, a high-speed, wide-reaching wireless standard, is India's great hope. Today it is just a hope, however. There are few if any successful Wimax implementations in the world. And while India would be willing to be among the first, the consensus is that the technology is not ready yet.

VSAT: Satellite connections are reliable and work anywhere. It's also by far the most expensive way to connect a village—the average satellite connection costs about \$1,000.

—B.W.

But unlike most countries, where the poor and isolated are often denied political power, India's rural population—about 70 percent of the country—has a solid majority in the government. "If India is going to continue growing, we need to do something in rural India," says Jhunjhunwala. "You can't concentrate on 30 percent of the population and ignore the rest because politically it will create a serious backlash."

Scoring Political Points With IT

In fact, that backlash has already begun. In 2004 the BJP, the political party that jump-started India's technology sector with special economic zones and tax incentives, was voted out of power—in large part because rural voters felt it was focusing too heavily on urban areas. And to this day the rural majority will simply vote out any politician who supports, say, a new highway in Bangalore, says Montek Singh Ahluwalia, deputy chairman of the planning committee and the author of India's latest five-year plan.

The Indian government is desperately seeking ways to extend the benefits of the information economy to rural India. Consequently, the government has declared 2007 “The Year of Broadband” and has set an ambitious goal to establish high-speed Internet-enabled computer kiosks—called Common Service Centers (CSCs)—in 100,000 of India’s 600,000 villages by March 2008. “The whole idea is to bring rural India into the mainstream,” says Aruna Sundararajan, CEO of the CSC project for Infrastructure Leasing & Financial Services, the firm that the government has chosen to manage the project. The CSC project has a budget of \$1.3 billion, about 30 percent of which comes from the national and state governments.

But despite the money, this project falls firmly into the easier-said-than-done category. Getting the computers working will be hard enough, but the project leaders also need to create demand for new IT services among the villagers, most of whom have never even used a phone, let alone a computer. And those services will need to have real economic or educational value—and be profitable for the companies offering them. “If you want to impress people you can do a project in 50 villages,” says Jhunjhunwala. “If you want it to scale, it has to be a business.”

“If India is going to continue growing, we need to do something in rural India. You can’t concentrate on 30 percent of the population and ignore the rest because politically it will create a serious backlash.”

—Ashok Jhunjhunwala, professor, Indian Institute of Technology

The Search for Valuable Services

A potential cornerstone for building valuable IT services is the Bhoomi, or land record. The vast majority of Indians are farmers and, thanks to laws designed to preserve the rural way of life, there is a cap on the amount of land any one person can own. The Bhoomi is essentially a statement of a farmer’s worth and his ticket for everything from securing a loan to settling disputes. But Indians aren’t allowed to hold the original Bhoomi. They can only take copies and the copies have a limited period of validity, which means farmers are constantly needing new ones.

They aren’t easy to get. Typically, a farmer has to buy a bus ticket and travel to one of the bigger towns in his area, pay a bribe to the local accountant in charge of managing the region’s records and cough up a 35-cent fee to the government. He then returns to the town a month later and picks up the record—assuming there hasn’t been a mix-up. The whole process can end up costing hundreds of rupees, which is why there is a project under way to digitize Bhoomi records and deliver them electronically to CSCs.

An Expensive Start

In Karnataka, a state in south-central India, a company called Comat Technologies has set up 800 Internet-equipped centers,

each with two computers, in villages since last October. And it is in the process of converting all of the state’s 20 million Bhoomi records into digital files at its own expense—it was the only way to convince a reluctant and skeptical state government to release the records at all, says Comat President Sriram Raghavan.

Deploying the Internet kiosks was another matter. Due to the lack of infrastructure, Comat has to negotiate rent in one of the few buildings capable of housing a computer in each village—usually one of a handful of poorly constructed concrete huts. But that’s just the start of it. Since there isn’t a reliable power supply, Comat had to buy a rechargeable battery for each computer that could run on both electricity and eventually, solar power. That cost about \$2,300. The computers, printer and other equipment cost another \$1,700.

Then there was the matter of the Internet connection. With phone lines almost nonexistent and the limited cell network unreliable for moving data files, Raghavan was forced to buy hundreds of satellite dishes at \$1,000 apiece. They work well enough, as long as rural villagers don’t try to hang their

laundry on these inscrutable objects—in which case a Comat worker needs to drive to the village and reposition the satellite. But it isn’t a long-term solution.

An Ecosystem of Services

The good news is that there is definitely a market for e-Bhoomi. In December Comat’s 800 CSCs averaged 400 Bhoomi records each (a more typical month averages between 100 and 200 records). But Comat gets only 11 cents for each record (the government takes the other 24 cents) after shelling out more than \$4,800 for each CSC.

The math doesn’t add up now, admits Raghavan, but he hopes that an ecosystem will emerge around the Bhoomi records. Sundararajan predicts that there are about 20 possible services, such as registering birth and death certificates and making utility payments, for example, that lend themselves to e-government. She is also hopeful that training, education and healthcare services could find a paying audience in the villages.

Money With Nowhere to Go

Contrary to the West’s image of starving peasants dressed in rags, rural Indians do have some money to spend. They just



don't have much opportunity to buy anything because of the terrible logistics and communications, says Vikram Tiwathia, CIO of the Confederation of Indian Industry. For example, no one bothers to sell insurance in rural areas because it currently takes months to get the Bhoomi record necessary to approve the loan. With Bhoomi records available electronically, it could create a huge new opportunity for Indian companies—and foreign companies too. India



Rural Indians do have money to spend, contrary to the West's image of starving peasants wearing rags. They just don't have much opportunity to buy anything, because of the terrible logistics and communications.

has about 200 million consumers today, but that number is predicted to rise to 450 million by 2010, if projects connecting rural India with the rest of the world are successful.

But there are huge challenges that still need to be overcome, admits Sundararajan, who says, "We need to keep our expectations somewhat conservative." For starters, the projects to date are happening in a one-off way; various companies are building kiosks that don't connect with each other, even though it is obvious to everyone that rural citizens would derive the most benefits from a single kiosk that did everything. Another challenge is language. While English is the language of business, hardly anyone in the rural areas speaks it—India has 23 official languages and hundreds of local dialects. In order for services to take off they will have to be designed and delivered in the local language. Sundararajan says that some of the CSC project's budget will go to address this "viability gap."



Will Cell Phones Save the Day?

In the meantime, there is another technology that is overcoming the viability gap on its own: the cell phone. Indians are buying cell phones at a staggering pace, and new cell towers are popping up all over the country. The London Business School estimates that for every 10 percent of the population that uses a mobile phone, a developing nation can expect its GDP to grow 0.6 percent a year. The impact is being felt everywhere in India today, says Devinder Kishore, marketing director for Nokia in India. For example, fishermen use phones to find the port with the best prices for

their catch, taxi drivers use phones so that they know when to pick a customer up and tradesmen use them so they don't have to return to their office after every appointment. Kishore says that the average Indian views the mobile phone as an investment that can pay for itself in a matter of months.

However, developing cell phone-based services that work as well as their counterparts on computers remains a big challenge even in the West. Still, the explosion of the cell phone network is

a case of a population finding its own solution to a problem, and the anecdotal returns can't be ignored. "I have a lot of hope for the mobile phone," says Subhash Bhatnagar, a professor at the Indian Institute of Management, Ahmedabad, and a consultant with the World Bank, who is otherwise skeptical of attempts to bridge the country's digital divide. "The Internet will play an important role once someone [makes it work well] with the mobile phone."

Yet even if the cell phone network takes off, and even if the government achieves its stated goal of establishing 100,000 CSCs brimming with services that improve rural people's lives, there is still no guarantee that it will have the political effect that the Indian government so desperately desires: to make rural India feel connected to urban India, which in turn will convince it to support infrastructure projects that the cities need in order to keep growing. It could be a convoluted leap of logic to assume that rural voters will connect all those dots together.

But Tiwathia, the CII CIO, says that long term it is impossible to see how all of India—and all of the world—doesn't end up benefiting from connecting rural India. "If you want [rural Indians] to become part of your workforce by 2010 or 2020, they need to start developing skills now," he says. Connecting rural India will bring its education system in line with the rest of the world. And India's workforce will grow. "It will make it easier to

move people and to move work to people," Tiwathia says. "That's something that CIOs in the U.S. need to think about." **CIO**

The Story of India's Rise

For tips on doing IT in India, as well as Senior Editor Ben Worthen's online diary and pictures of his trip to India, see **THE I.T. MANAGER'S ESSENTIAL GUIDE TO INDIA** at www.cio.com/inprint.

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First Impressions

The first days of a new job are nerve-wracking for anyone. But for CIOs, those first days and weeks are often seen as a test of their abilities as leaders.

The idea of compiling best practices to guide CIOs through their first 90 days germinated within a small group of Canadian CIO Executive Council members. The larger Council membership embraced the idea, and nearly 70 CIOs from around the world contributed to the Council report "A Running Start: Success in Your First 90 Days on the Job."

Eldon Amoroso, senior director at London Police Services in Ontario, and project steering committee member, was promoted to CIO three years ago and wishes he had known then what he knows now. Fellow steering committee member Ted Maulucci, CIO at construction company Tridel, adds, "You can't do it all in the first three months, but you can definitely start targeting different areas, especially building strong relationships."

Below, CIO Executive Council members recall their own first 90 days and share their most critical lessons.

Meet the People

"I set up 45-minute appointments with every senior officer in the company," recalls Michael Abbene, who was promoted to CIO of Arch Coal in July 2005. When Ron Kifer started his job last year as group vice president and CIO at \$9 billion Applied Materials, he developed customized

business-relationship plans for each business leader, ranging from inviting certain execs to his IT team meetings to taking others out to dinner.

Relationship building also extends to your new team. Vicki Petit, who was promoted to vice president of informa-



Vicki Petit

tion services at \$600 million furniture manufacturer KI in 1999, remembers how hard it was to make the transition from being a colleague to being the person in charge. "I didn't know the specifics of what each of my team members had accomplished, and it took meeting with them to broaden my perspective," she says.

First-time CIO Kristen Blum finished her first 90 days last September after being hired by retailer Abercrombie & Fitch. "I made sure everyone knew my focus was on the people. I met with all of my direct reports, their direct reports, as many people as I could," says Blum.

Take Your Time

Although new CIOs feel pressured to accomplish big things quickly, the best thing you can do when it comes to big moves is to take your time. Maulucci has spent his entire

Getting Organized

CIOs share tips for the first 90 days and beyond

Develop a strategic plan:

Ron Kifer, group vice president and CIO at Applied Materials, created a high-level 90-day strategic plan before his first day on the job. Within his first 30 days, he incorporated specific pain points of the company, the type of CIO leader required and the mandate

of the executive team.

The plan laid out steps to support the mandate and position IT as an innovation leader. (To download Kifer's initial 90-day plan, go to www.cio.com/inprint.)

Track relationships:

Vicki Petit, vice president of information services at furniture manufacturer KI,

created an Excel spreadsheet to track hours spent per month on building relationships in five areas: vendors, cross-functional meetings, individual business leaders, professional associations and external peers. She sets yearly goals in each area and reports results to her boss monthly.

Get a coach:

Michael Abbene, CIO at Arch Coal, used a coach (a former CIO from a different company) to offer guidance during his first 90 days. They had weekly phone discussions and regularly met face-to-face. The relationship continues today—18 months after he became CIO. —C.M.



Ron Kifer

career at Tridel and became CIO five years ago. "Even though I already knew the team, I didn't rush into anything when I first became CIO," he recalls. "I had witnessed other colleagues step into senior roles and rush decision making to make a name for themselves. It didn't work." Blum agrees. "For me, I needed one month to sit back, get immersed in the culture and just take it all in," she says.

Petit made a big move too soon (she changed IT's organizational structure) and regretted it. "I didn't take the time to see what the existing staff could accomplish in their original functions. Nine months after I did it, I went back to the original org structure," she says.

Delivering small, quick wins is a safer way to make a positive first impression. To build credibility with the business, Kifer designed a 90-day strategic plan featuring short-term IT projects that had highly visible, positive outcomes and employed existing or underutilized technologies. One of these was a way to manage the proliferation of passwords that employees needed to access hundreds of online applications. Using existing capabilities and changing some overly restrictive policies, Kifer implemented a single sign-on capability for more than 400 of the most frequently accessed programs. "With negligible cost to implement, this quick win [it took less than 30 days] strengthened security, reduced costs and improved productivity. It also met my criteria of being highly visible and positively affecting a large customer base," says Kifer.

Change Your Perspective

Becoming CIO doesn't just mean being the new person in charge of IT; it means becoming a new C-level exec. CIOs promoted from within say they found it tempting to cling to parts of their old job. Instead, "You need to push yourself to change your perspective and embrace your new responsibilities," recommends Petit. And for those CIOs coming in off the street? "Be sure you understand the key success factors before you walk in the door," says Kifer. He researched Applied Materials and contacted vendors he knew were working with the company. From this research, he concluded that he needed to bring a "change leader" way of thinking to the table, and this was the foundation for his 90-day plan.

Regardless of how they get there, new CIOs must recognize the unique value of their position. As one respondent to the Council survey put it when asked for his best single nugget of advice, "The CIO position is the intersection of business strategy and technology strategy. If you become all business, you cease to add distinctive value. It's the same if you're all technology. Learn the business, learn your technology architectures and chart a course that ties the two together."

Carrie Mathews is a senior program manager at the CIO Executive Council. To comment on this article, go to the online version at www.cio.com/inprint.

[STARTING THE JOB]

Your **Top 10** Priorities

CIOs ranked the importance of 30 activities to a CIO's success in the first three months of the job. These were the top 10.

- 1. Understand** the corporate strategy and assess how well the department you have inherited is aligned with that strategy.
- 2. Communicate** your own goals and leadership style to your team.
- 3. Identify** key success factors for IT from the perspective of all business unit and function heads.
- 4. Structure** your days and weeks so that you have time to learn, focus and create short-term value while preparing a long-term plan.
- 5. Work** with each group within your department to get a feel for team dynamics and individual team members.
- 6. Establish** interpersonal relationships with influential people and lay the groundwork for coalitions.
- 7. Understand** the history and current state of the relationship between the IT department and each business unit or corporate function.
- 8. Target** early wins that matter to your boss.
- 9. Identify** the informal networks in the organization (Who has the ear of the boss? Whom do frontline employees really trust and follow?).
- 10. Negotiate** the terms for success with your boss.

SOURCE: Poll of 67 CIO respondents, published in "A Running Start: Success in Your First 90 Days on the Job," CIO Executive Council, December 2006

The CIO Executive Council is a professional organization for CIOs founded by CIO's publisher. To learn more about the Council, visit www.cioexecutivecouncil.com or contact Vice President of Development Dexter Siglin at dsiglin@cio.com or 508 935-4493.

endlines

BY AL SACCO

THE ENVIRONMENT TEST

How **Green** Are You?

You say your actions reflect your ethics. Take this quiz to find out if they really do.

1) Does your company have a social responsibility program that includes "green" initiatives?

- a) Yes, we have one or more programs in effect that are dedicated to environmental sustainability.
- b) No, but we are starting to address the issue.
- c) No, and we don't have any plans to become greener. We don't see what's in it for us.

2) Does your organization have environmental sustainability goals for IT (for example, improved energy efficiency)?

- a) Yes, and we've already made progress toward them.
- b) Yes, and we plan to launch initiatives in the near future.
- c) No. We believe that energy will always be cheap and plentiful.

3) Is the environmental sustainability of your IT department addressed at the executive level?

- a) Yes, the issue has been raised and goals set.
- b) No, but our IT department is trying to "green" itself.
- c) No, and we're not doing anything about it at a lower level, either.

4) When purchasing hardware, do you take into account whether the products are green or produced using sustainable manufacturing processes?

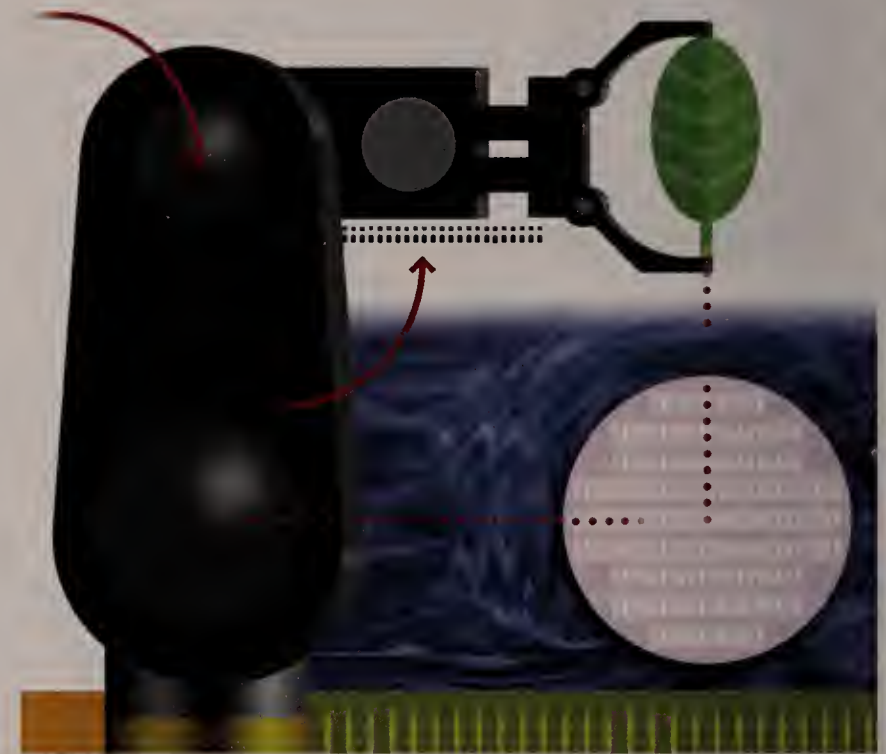
- a) Yes, and we buy Energy Star-approved products when available.
- b) Occasionally, but that doesn't often dictate purchasing decisions.
- c) No. We just don't care.

5) Does your organization participate in vendors' product take-back/recycling programs?

- a) Yes, we recycle all used hardware, be it through the manufacturer or otherwise.
- b) Yes, we recycle all hardware that the vendor will take back, but we throw away the rest.
- c) No. It's too much trouble.

6) Do you document your progress toward "greening" your IT department?

- a) Yes, and we have metrics to show the effects of our initiatives.



- b) Yes, but we have no real metrics.
- c) No. Are you kidding us or what?

7) Have you ever stopped doing business with a vendor because of their lack of commitment to the environment?

- a) Yes, and we'd do it again.
- b) No, but we have chosen vendors based on their commitment to the environment.
- c) We don't even consider it.

8) Do business leaders involve IT in development of your company's environmental strategy?

- a) Yes, IT participates.
- b) Business leaders don't usu-

- ally ask for our participation, but they're receptive to our ideas.
- c) Not even a little bit.

9) Has your organization had help from a consultancy in "greening" the IT department or your business?

- a) Yes.
- b) No, but we're researching consultancies.
- c) No, and we don't plan to.

10) What kind of vehicle do you drive?

- a) I don't drive.
- b) Hybrid (gas/electric) vehicle.
- c) The biggest hog I can find.

SCORE » Give yourself **2 points** for every "a," **1 point** for every "b," **0 points** for every "c."

0-8 points: What environment? **9-15 points:** You know the planet needs you. Now it's time to take action. **16-20 points:** Good work. You not only understand IT can help, you're doing something about it.

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To see how green your thinking is compared with others', take the quiz online at www.cio.com/inprint.

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